PRE-PUBLICATION NOTICE

The EPA Administrator, Michael S. Regan, signed a proposed rule and notice of public hearing on December 13, 2023, and EPA is submitting it for publication in the Federal Register (FR). The following is not the official version of the notice. This document is not disseminated for purposes of EPA's Information Quality Guidelines and does not represent an Agency determination or policy. While we have taken steps to ensure the accuracy of this internet version of this notice, the official version will be published in a forthcoming FR publication, which will appear on https://www.federalregister.gov and on Regulations.gov (https://www.regulations.gov) in Docket No. EPA-HQ-OW-2021–0736.

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 432

[EPA-HQ-OW-2021-0736; FRL-8885-01-OW]

RIN 2040-AG22

Clean Water Act Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule and notice of public hearing.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is proposing a regulation to revise the technology-based effluent limitations guidelines and standards (ELGs) for the meat and poultry products (MPP) point source category. The proposed rule would improve water quality and protect human health and the environment by reducing the discharge of nutrients and other pollutants to the nation's surface waters. EPA is proposing several regulatory options, including the preferred option discussed in this notice. The preferred option is estimated to cost $232 million annually and reduce pollutant discharges by approximately 100 million pounds per year.

DATES: Comments must be received on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Public hearing: EPA will hold two public hearings about this proposed rule on January 24, 2024 and January 31, 2024**.** Visit EPA's website at https://www.epa.gov/eg/meat-and-poultry-products-effluent-guidelines-2024-proposed-rule for additional information about the public hearings and for any potential changes to the public hearing schedule.

ADDRESSES: You may send comments, identified by Docket ID No. EPA-HQ-OW-2021-0736, by any of the following methods:

- Federal eRulemaking Portal: https://www.regulations.gov/ (our preferred method). Follow the online instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Office of Water Docket, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- Hand Delivery or Courier: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received may be posted without change to https://www.regulations.gov/, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the "Public Participation" heading of the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Steve Whitlock, Engineering and Analysis Division, Office of Water (4303T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington DC 20460; telephone number: 202-566-1541; email address: Whitlock.Steve@epa.gov.

SUPPLEMENTARY INFORMATION:

Preamble Acronyms and Abbreviations. EPA uses multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, EPA defines terms and acronyms used in Appendix A of this preamble.

Supporting Documentation. The proposed rule is supported by several documents, including:

- Technical Development Document for Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category (TDD), Document No. 821-R-23-011. This report summarizes the technical and engineering analyses supporting the proposed rule including cost methodologies, pollutant removal estimates, non-water quality environmental impacts, and calculation of the proposed effluent limitations.
- Environmental Assessment Analysis for Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category (EA Report), Document No. 821-R-23-012. This report summarizes the potential environmental and human health impacts estimated to result from implementation of the proposed rule. The report also describes the environmental justice analysis conducted.
- Benefit and Cost Analysis for Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category (BCA Report), Document No. 821-R-23-013. This report summarizes the societal benefits and costs estimated to result from implementation of the proposed rule.
- Regulatory Impact Analysis for Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category (RIA), Document No. 821-R-23-014. This report presents a profile of the MPP industry, a summary of estimated costs and impacts associated with the proposed rule, and an assessment of the potential impacts on employment and small businesses.

- Docket Index for the Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category. This document provides a list of the additional memoranda, references, and other information EPA relied on for the proposed revisions to the MPP ELGs.

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Appendix A to the Preamble: Definitions, Acronyms, and Abbreviations Used in This Preamble

I. **Executive Summary**

A. Purpose of Rule

EPA is proposing revisions to a regulation that would apply to wastewater discharges from meat and poultry products (MPP) facilities. The MPP industry discharges large quantities of nutrients, such as nitrogen and phosphorus, that enter the Nation's waters. Nutrient pollution is one of the most widespread, costly, and challenging environmental problems impacting water quality in the United States. Excessive nitrogen and phosphorus in surface water can lead to a variety of problems, including eutrophication and harmful algal blooms, that have negative impacts on human health and the environment. EPA reported in *Preliminary Effluent Guidelines Program Plan 15* (Preliminary Plan 15. USEPA. 2021. EPA-821-R-21-003) that the MPP industry discharges the highest phosphorus levels and second highest nitrogen levels of all industrial categories.

The MPP industry has an estimated 5,055 facilities across the country that engage in meat and/or poultry slaughter, further processing, and/or rendering. Proposed requirements would reduce the amount of nutrients and other pollutants discharged from the MPP industry, both directly into waters of the United States under state or EPA-issued NPDES permits and indirectly via sanitary sewers or transport to and through municipal sewage treatment plants, also known as Publicly Owned Treatment Works (POTWs). Importantly, this rule would advance progress on environmental justice goals.

EPA initially promulgated the MPP ELGs in 1974 and amended the regulation in 2004. It currently applies only to direct dischargers (those that discharge directly to a water of the United States), and only to about 150 of the 5,055 MPP facilities in the industry. Phosphorus is not regulated under the current ELGs. Pollutants in the wastewater from MPP indirect dischargers, which are not currently regulated by the ELGs, can interfere with or pass through POTWs. Research also shows communities near MPP facilities are likely to experience multiple environmental stressors, and in these communities, minority and low-income percentiles exceed national averages. Additionally, some MPP facilities are already using available and affordable technologies that can be used at additional facilities nationwide to reduce pollutant discharges from the MPP industry.

EPA is considering a range of options in this rulemaking. The options include more stringent effluent limitations on total nitrogen, new effluent limitations on total phosphorus, updated effluent limitations for other pollutants, new pretreatment standards for indirect dischargers, and revised production thresholds for some of the subcategories in the existing rule. EPA is also requesting comment on potential effluent limitations on chlorides for high chloride waste streams, establishing effluent limitations for *E. coli* for direct dischargers, and including

conditional limits for indirect dischargers that discharge to POTWs that remove nutrients to the extent that would be required under the proposed pretreatment standards in certain regulatory options. Each option would result in different levels of pollutant reduction and costs.

EPA is proposing a preferred regulatory option (described in section VII below) and seeking comment on the other options. EPA estimates the preferred regulatory option (Option 1) would reduce pollutant discharges by approximately 100 million pounds per year. EPA predicts the preferred regulatory option would result in environmental and ecological improvements, including reduced adverse impacts to wildlife and human health.

EPA estimates that the proposed rule based on the preferred regulatory option will cost $232 million per year in social costs and result in $90 million per year in monetized benefits using a 3 percent discount rate and $227 million per year in social costs and result in $85 million per year in monetized benefits using a 7 percent discount rate. The benefit numbers are based on modeling water quality improvements in five regional water basins and then extrapolating the benefits results from those basins to remainder of the country.[1] The benefit estimates also include the national effects of increased air pollution and greenhouse gas emissions under the rule.

Not all costs and benefits can be fully quantified and monetized, and importantly, EPA anticipates the proposed rule would also generate important unquantified benefits (*e.g.,* improved habitat conditions for plants, invertebrates, fish, amphibians, and the wildlife that prey on aquatic organisms). Furthermore, while some health benefits and willingness to pay for water quality

[1] See Section 3 of the Benefit and Costs Analysis for descriptions of the water quality modeling and monetized benefit calculations. See Appendix E of the Benefit and Costs Analysis for descriptions of the approach for extrapolating the regional water quality benefits to the rest of the country.

improvements have been quantified and monetized, those estimates may not fully capture all important water quality-related benefits.

B. Summary of Proposed Rule

EPA proposes to revise the ELGs for the MPP industry based on Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT), Best Available Technology Economically Achievable (BAT), Best Available Demonstrated Control Technology (BADCT) for New Source Performance Standards (NSPS), Pretreatment Standards for Existing Sources (PSES), and Pretreatment Standards for New Sources (PSNS). BPT, BCT, and BAT would apply to existing facilities that directly discharge to waters of the U.S. BADCT/NSPS would apply to new sources that directly discharge to waters of the U.S. PSES and PSNS would apply to existing and new sources, respectively, that discharge indirectly via POTWs.

EPA is proposing three regulatory options that build on the current MPP ELGs. Option 1, which is EPA's preferred regulatory option in this proposed rule, would include new phosphorus limits and revised nitrogen limits[2] for large direct dischargers and new pretreatment standards on certain conventional pollutants for large indirect dischargers. Here, large refers to the existing production thresholds in the current MPP ELGs. Option 2 would include the requirements in Option 1 and add nutrient limits for indirect discharging first processors and renderers above specified production thresholds. Option 3 would be similar to Option 2 but with lower production thresholds for the nutrient limits and conventional pollutant limits for both direct and

[2] The terms nitrogen and phosphorus refer to total nitrogen and total phosphorus throughout this document.

indirect dischargers. In contrast to Options 1 and 2, Option 3 would use lower production thresholds than those in the existing rule. All three options would minimize impacts to small firms, based on the impact thresholds described in EPA's Regulatory Flexibility Act guidance for assessing impacts to small firms in terms of a cost to revenue ratio. While Option 3 includes limits for more facilities than Options 1 and 2, it is similarly structured to avoid significant impacts to small firms. Option 3 would achieve the greatest amount of pollutant reductions of the three options. Option 3 would also simplify the existing rule by utilizing the same size thresholds for all subcategories. For example, total phosphorus limits would apply to direct discharging facilities in all subcategories producing greater than or equal to 10 million pounds per year under Option 3. Under Options 2 and 3, EPA also proposes to include "conditional limits," which would allow an exemption from nutrient pretreatment standards for indirect dischargers that are discharging to POTWs that have nutrient removal capabilities that result in equivalent nutrient removal.

The following discussion is organized by discharge type (direct or indirect) and by facility status (existing or new):

Direct Discharges from Existing Sources:

Options 1 and 2: BAT would include new phosphorus effluent limitations based on chemical removal and more stringent nitrogen effluent limitations based on biological treatment to achieve full denitrification. BCT and BPT for the conventional pollutants (biochemical oxygen demand (BOD), total suspended solids (TSS), oil & grease, pH) limits would remain unchanged from the current MPP ELG. These limits would apply to direct discharging facilities based on the same production thresholds as the existing rule: 50 million pounds per year of finished product produced for meat further processors (Subcategories F-I), 50 million pounds per

year of live weight killed (LWK) for meat slaughtering (Subcategories A-D), 100 million pounds per year of LWK for poultry slaughtering (Subcategories K), 7 million pounds of finished product per year for poultry further processors (Subcategory L), and 10 million pounds per year of raw material processed for renderers (Subcategory J). The limits for facilities in Subcategory E would not be changed.

Option 3: BAT would include the same BAT requirements as Option 1, with lower production thresholds for applicability. Specifically, BAT would include new phosphorus effluent limitations based on chemical removal for facilities in all subcategories that are producing greater than or equal to 10 million pounds per year. Additionally, BAT would include new and/or more stringent nitrogen limits based on biological treatment to achieve full denitrification for facilities in all subcategories producing greater than or equal to 20 million pounds per year. BAT for ammonia as N limits and BCT and BPT limits for conventional pollutants (BOD, TSS, oil & grease, fecal coliform, pH) limits would remain unchanged from the current MPP ELGs. The limits for facilities in Subcategory E would not be changed.

Indirect Discharges to POTWs from Existing Sources:

Option 1: PSES would include new conventional pollutant limits based on BPT and BCT limits for BOD, TSS, and oil & grease based on screening and dissolved air flotation (DAF) technology. Under this option, pretreatment standards would apply to facilities producing greater than: 50 million pounds per year of finished product for meat further processors (Subcategories F-I), 50 million pounds per year of LWK for meat slaughtering (Subcategories A-D), 100 million pounds per year of LWK for poultry slaughtering (Subcategory K), 7 million pounds per year of finished product for poultry further processors (Subcategory L), and 10 million pounds per year

of raw material processed by renderers (Subcategory J). No new PSES based on pretreatment standards for nitrogen and phosphorus would be established under Option 1.

Option 2: Option 2 would include the same PSES requirements for conventional pollutants as Option 1. Additionally, PSES would include new pretreatment standards based on BAT for phosphorus based on chemical removal and new nitrogen pretreatment standards based on biological treatment to achieve full denitrification. The nitrogen and phosphorus PSES requirements would include facilities with production thresholds greater than or equal to: 200 million pounds per year of LWK for meat slaughtering (Subcategories A-D), 200 million pounds per year of LWK for poultry slaughtering (Subcategory K), and 350 million pounds per year processed by renderers (Subcategory J).

Option 3: Option 3 would include the same PSES requirements as Option 2, with lower production thresholds for applicability. Specifically, PSES would include new conventional pollutant pretreatment standards based on BPT/BCT for BOD, TSS, and oil & grease based on screening and DAF techniques for all indirect MPP facilities producing greater than 5 million pounds per year. Additionally, PSES would include new phosphorus and nitrogen pretreatment standards based on BAT for all indirect MPP facilities producing greater than 30 million pounds per year.

Direct Discharges from New Sources:

Under all options, NSPS based on BADCT would be equal to BAT, BPT, and BCT. Thus, Options 1, 2 and 3 would contain the same requirements for existing and new direct discharging facilities.

Indirect Discharges from New Sources:

Under all options, PSNS would be equal to PSES. Thus, Options 1, 2, and 3 would contain the same requirements for existing and new indirect discharging facilities.

Additional details about the proposed ELGs are described in Section VII of this preamble.

II. Public Participation

Submit your comments, identified by Docket ID No. EPA-HQ-OW-2021-0736, at https://www.regulations.gov (our preferred method), or the other methods identified in the **ADDRESSES** section. Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit to EPA's docket at https://www.regulations.gov any information you consider to be Confidential Business Information (CBI), Proprietary Business Information (PBI), or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). Please visit https://www.epa.gov/dockets/commenting-epa-dockets for additional submission methods; the full EPA public comment policy; information about CBI, PBI, or multimedia submissions; and general guidance on making effective comments.

III. General Information

A. Does this action apply to me?

Entities potentially regulated by any final rule following this action include:

Table 0-1

Category	Example of Regulated Entity	North American Industry Classification System (NAICS) Code
Industry	Facilities engaged in slaughtering, further processing, or rendering of meat and poultry products, which may include the following sectors:	
	Meat Packing Plants	31161
	Animal (except Poultry) Slaughtering	311611
	Meat Processed from Carcasses	311612
	Sausages and Other Prepared Meat Products	311612
	Poultry Slaughtering and Processing	311615
	Meat & Meat Product Wholesalers	422470
	Poultry Processing	311615
	Rendering and Meat By-Product Processing	311613
	Support Activities for Animal Production	11521
	Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats	311119
	Dog and Cat Food Manufacturing	311111
	Other Animal Food Manufacturing	311119
	All Other Miscellaneous Food Manufacturing	311999
	Animal and Marine Fats and Oils	311613
	Livestock Services, Except Veterinary.	311611

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table includes the types of entities that the EPA is now aware could potentially be regulated by this action. Other types of entities not included could also be regulated. To determine whether your entity is regulated by this action, you should carefully examine the applicability criteria found in 40 CFR parts 432.1, 432.10, 432.20, 432.30, 432.40, 432.50, 432.60, 432.70, 432.80, 432.90, 432.100, 432.110, and 432.120 and the definitions in 40 CFR 432.2. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

B. What action is the Agency taking?

The Agency is proposing to revise the existing MPP ELGs and is soliciting comment on possible revisions and additions to the ELGs for existing and new sources in the MPP point source category.

C. What is the Agency's authority for taking this action?

EPA is proposing to promulgate this rule under the authority of sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act (CWA), 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

D. What are the incremental costs and benefits of this action?

This proposed action is estimated to cost $232 million per year in social costs and result in $90 million per year in monetized benefits using a 3 percent discount rate and $227 million per year in social costs and result in $85 million per year in monetized benefits using a 7 percent discount rate. The current benefit numbers reflect the national effects of increased air pollution and greenhouse gas emissions under the rule. EPA also expects that there will be additional non-monetized benefits that result from the proposed action. See the Benefits Cost Analysis for additional information on monetization and quantification of health, ecological, market, and economic productivity benefits.

IV. Background

A. Clean Water Act

Congress passed the Federal Water Pollution Control Act Amendments of 1972, also known as the Clean Water Act ("CWA" or "the Act"), to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. 1251(a)). The CWA

establishes a comprehensive program for protecting our nation's waters. Among its core provisions, the CWA prohibits the discharge of pollutants from a point source to waters of the United States (WOTUS), except as authorized under the CWA. Under section 402 of the CWA, discharges may be authorized through a National Pollutant Discharge Elimination System (NPDES) permit. The CWA establishes a two-pronged approach for these permits: technology-based controls that establish the floor of performance for all dischargers, and water quality-based limits where the technology-based limits are insufficient for the discharge to meet applicable water quality standards. To serve as the basis for the technology-based controls, the CWA authorizes EPA to establish nationally applicable, technology-based effluent limitations guidelines and new source performance standards for discharges from different categories of point sources, such as industrial, commercial, and public sources.

Direct dischargers must comply with effluent limitations in NPDES permits. Technology-based effluent limitations in NPDES permits are derived from effluent limitations guidelines (CWA sections 301(b) and 304, 33 U.S.C. 1311(b) and 1314) and new source performance standards (CWA Section 306, 33 U.S.C. 1316) promulgated by EPA, or based on best professional judgment (BPJ) where EPA has not promulgated an applicable effluent limitations guideline or new source performance standard (CWA section 402(a)(1)(B), 33 U.S.C. 1342(a)(1)(B); 40 CFR 125.3(c)). The effluent limitations guidelines and new source performance standards established by regulation for categories of industrial dischargers are based on the degree of control that can be achieved using various levels of pollution control technology, as specified in the Act.

The CWA also authorizes EPA to promulgate nationally applicable pretreatment standards that restrict pollutant discharges from categories of indirect dischargers (i.e., facilities

that introduce wastewater to POTWs), as outlined in CWA sections 307(b) and (c), and 304(g) (33 U.S.C. 1317(b) and (c), and 1314(g)). EPA establishes national categorical pretreatment standards for those pollutants in wastewater from indirect dischargers that may pass through, interfere with, or are otherwise incompatible with POTW operations (CWA Section 307(b), 33 U.S.C. 1317(b)). Generally, in determining whether pollutants pass through a POTW when considering the establishment of categorical pretreatment standards, EPA compares the percentage of pollutant removed by typical POTWs achieving secondary treatment with the percentage of the pollutant removed by facilities meeting the candidate technology basis (e.g., BPT or BAT) (46 FR 9408, 9416 (Jan. 28, 1981)). A pollutant is deemed to pass through a POTW when the average percentage removed by well-operated POTWs performing secondary treatment is less than the average percentage removed by direct dischargers operating the BPT/BAT technology basis. Pretreatment standards are designed to ensure that wastewaters from direct and indirect industrial dischargers are subject to similar levels of treatment (CWA Section 301(b) and 33 U.S.C. 1311(b). The legislative history of the 1977 CWA amendments explains that pretreatment standards are technology-based and analogous to technology-based effluent limitations for direct dischargers. As further explained in the legislative history, the combination of pretreatment and treatment by the POTW is intended to achieve the level of treatment that would be required if the industrial source were making a direct discharge (Conf. Rep. No. 95–830, at 87 (1977), reprinted in U.S. Congress, Senate Committee on Public Works (1978), *A Legislative History of the CWA of 1977*, Serial No. 95–14 at 271 (1978)). For categorical pretreatment standards, EPA's approach for passthrough satisfies two competing objectives set by Congress: (1) That standards for indirect dischargers be equivalent to standards for direct dischargers; and (2) that the treatment capability and performance of the POTWs be recognized

and taken into account in regulating the discharge of pollutants from indirect dischargers (CWA sections 301(b)(1)(A) and 301(b)(1)(E) (33 U.S.C. 1311(b)(1)(A) and 1311(b)(1)(E)). In addition, POTWs are required to implement local treatment limits applicable to their industrial indirect dischargers to satisfy any local requirements (40 CFR 403.5).

EPA promulgates national ELGs for major industrial categories for three classes of pollutants: (1) conventional pollutants (*i.e.*, BOD, TSS, oil & grease, fecal coliform, and pH), as outlined in CWA Section 304(a)(4) (33 U.S.C. 1314(a)(4) and 40 CFR 401.16); (2) toxic pollutants (*e.g.*, toxic metals such as arsenic, mercury, selenium, and chromium; toxic organic pollutants such as benzene, benzo-a-pyrene, phenol, and naphthalene), as outlined in CWA Section 307(a) (33 U.S.C. 1317(a), 40 CFR 401.15, and 40 CFR 423 appendix A); and (3) nonconventional pollutants, which are those pollutants that are not categorized as conventional or toxic (*e.g*., ammonia-N, nitrogen, phosphorus, and total dissolved solids (TDS)).

B. Effluent Limitations Guidelines and Standards (ELGs)

EPA develops ELGs that are technology-based regulations for a category of dischargers. EPA bases these regulations on performance of control and treatment technologies in light of the factors specified in CWA Section 304(b) and 306 (33 U.S.C. 1314(b), 1316), but after the limitations and standards are established, dischargers may use any technology that meets the limitations and standards. The legislative history of CWA Section 304(b) (33 U.S.C. 1314(b)), which is the heart of the effluent guidelines program, describes the need to press toward higher levels of control through research and development of new processes, modifications, replacement of obsolete plants and processes, and other improvements in technology, taking into account the cost of controls. Congress has also stated that EPA does not consider water quality impacts on individual water bodies as the guidelines are developed (Statement of Senator

Muskie, October 4, 1972, reprinted in *A Legislative History of the Water Pollution Control Act Amendments of 1972*, at 170. (U.S. Senate, Committee on Public Works, Serial No. 93-1, January 1973); *Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1005, "The Administrator must require industry, regardless of a discharge's effect on water quality, to employ defined levels of technology to meet effluent limitations." (citations and internal quotations omitted). CWA Sections 304(b), 304(g), and 306(b) (33 U.S.C. 1314(b), 1314(g) and 1316(b)) authorize revision of ELGs where appropriate.

The CWA specifies four types of technology-based ELGs applicable to direct dischargers and two types of pretreatment standards applicable to indirect dischargers, referred to collectively as "effluent limitations guidelines and standards (ELGs)". These ELGs are summarized below.

1. Best Practicable Control Technology Currently Available (BPT)

For existing direct dischargers, the Act specifies two increasingly-stringent levels of control. The first level of control, BPT, applies to all pollutants (conventional, toxic, and nonconventional pollutants). Traditionally, as is consistent with the statute, its legislative history and caselaw, EPA defines "currently available" based on the average of the best performance of facilities within the industry, grouped to reflect various ages, sizes, processes, or other common characteristics *(Chem. Mfrs. Assn. v. EPA*, 870 F.2d 177, 207-208 (1989)). The statute specifies a number of factors for consideration in establishing or revising BPT: the cost of achieving effluent reductions in relation to the effluent reduction benefits, the age of equipment and facilities, the processes employed, the engineering aspects of the control technologies, process changes, non-water quality environmental impacts (including energy requirements), and such other factors as the Administrator deems appropriate (CWA Section 304(b)(1)(B), 33 U.S.C.

1314(b)(1)(B)). If, however, existing performance is uniformly inadequate, EPA may establish limitations based on higher levels of control than what is currently in place in an industrial category, based on an Agency determination that the technology is available in another category or subcategory and can be practicably applied.

2. Best Conventional Pollutant Control Technology (BCT)

BCT represents the second level of stringency for controlling discharge of conventional pollutants. In addition to other factors specified in CWA Section 304(b)(4)(B) (33 U.S.C. 1314(b)(4)(B)), the CWA requires that EPA establish BCT limitations after consideration of a two-part "cost-reasonableness" test. EPA explained its methodology for the development of BCT limitations in July 1986 (51 FR 24974 (July 9, 1986)). The Act designates the following as conventional pollutants: BOD, TSS, fecal coliform, pH, and any additional pollutants defined by the Administrator as conventional (CWA Section 304(a)(4); 33 U.S.C. 1314(a)(4)). The Administrator designated oil & grease as an additional conventional pollutant (44 FR 44501 (July 30, 1979) and 40 CFR 401.16).

3. Best Available Technology Economically Achievable (BAT)

BAT represents the second level of stringency for controlling discharge of toxic and nonconventional pollutants (including nutrients). Courts have referred to this as the CWA's "gold standard" for controlling discharges from existing sources (*Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1003). In general, BAT represents the best available, economically achievable performance of facilities in the industrial subcategory or category, considering the factors specified in CWA Section 304(b) (33 U.S.C. 1314(b)). As the statutory phrase intends, EPA considers the technological availability and economic achievability in determining what level of control represents BAT (CWA Section 301(b)(2)(A), 33 U.S.C. 1311(b)(2)(A)). The

statute specifies a number of factors for consideration in establishing or revising BAT: the cost of achieving BAT effluent reductions, the age of equipment and facilities involved, the process employed, potential process changes, and non-water quality environmental impacts, including energy requirements, and such other factors as the Administrator deems appropriate (CWA Section 304(b)(2)(B), 33 U.S.C. 1314(b)(2)(B)). The Agency retains considerable discretion in assigning the weight to be accorded these factors (*Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978)). EPA usually determines economic achievability based on the effect of the cost of compliance with BAT limitations on overall industry and subcategory financial conditions *(Chem. Mfrs. Assn. v. EPA*, 870 F.2d 177, 251-52 (5th Cir. 1988)).

BAT reflects the highest performance in the industry and may reflect a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category, bench scale or pilot plant studies, or foreign plants (*Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1006; *American Paper Inst. v. Train*, 543 F.2d 328, 353 (D.C. Cir. 1976); *American Frozen Food Inst. v. Train*, 539 F.2d 107, 132 (D.C. Cir. 1976)). BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice *(American Frozen Foods*, 539 F.2d at 132, 140; *Reynolds Metals Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985); *California & Hawaiian Sugar Co. v. EPA*, 553 F.2d 280, 285-88 (2nd Cir. 1977)).

4. New Source Performance Standards (NSPS)

NSPS reflect effluent reductions that are achievable based on BADCT. Owners of new sources have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS should represent the most stringent controls attainable through the application of the BADCT for all pollutants (that is, conventional,

nonconventional, and toxic pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements (CWA Section 306(b)(1)(B), 33 U.S.C. 1316(b)(1)(B)).

5. Pretreatment Standards for Existing Sources (PSES)

CWA Section 307(b) (33 U.S.C. 1317(b)), of the Act calls for EPA to issue pretreatment standards for discharges of pollutants to POTWs. PSES are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs. Categorical pretreatment standards are technology-based and are analogous to BPT and BAT effluent limitations guidelines, and thus, the Agency typically considers the same factors in promulgating PSES as it considers in promulgating BPT/BAT. The General Pretreatment Regulations, which set forth the framework for the implementation of categorical pretreatment standards, are found at 40 CFR 403. These regulations establish general pretreatment standards that apply to all non-domestic dischargers (52 FR 1586 (January 14, 1987)).

6. Pretreatment Standards for New Sources (PSNS)

CWA Section 307(c) (33 U.S.C. 1317(c)) calls for EPA to promulgate PSNS. Such pretreatment standards must prevent the discharge of any pollutant into a POTW that may interfere with, pass through, or may otherwise be incompatible with the POTW. EPA promulgates PSNS based on BADCT for new sources. New indirect dischargers have the opportunity to incorporate into their facilities the best available demonstrated technologies. The Agency typically considers the same factors in promulgating PSNS as it considers in promulgating NSPS.

C. Actions Leading to Proposed Revisions to the MPP ELGs

1. National Review of Nutrient Discharges from Industrial Sources (USEPA. 2019. EPA-821-R-19-005)

EPA conducted a cross-industry review of publicly available discharge monitoring report (DMR) and toxics release inventory (TRI) data from 2015 on nutrient discharges from industrial point source categories. This review identified industries, based on their discharges of nutrients in wastewater and the potential to reduce their nutrient discharges, that may be candidates for ELG development or revision and prioritized them for further review. EPA then ranked industrial categories by the nutrient loads in their wastewater discharges, specifically looking at the median facility load and number of facilities reporting discharges. The MPP industry ranked as one of the highest in the analysis for total nitrogen and total phosphorus, leading EPA to focus on this industry (USEPA. 2019. EPA-HQ-OW-2019-0618).

To better understand the MPP industry and related nutrient sources, discharges, and treatment, EPA reviewed historical documentation supporting the development of the existing MPP ELGs, analyzed 2015 DMR and TRI data, and contacted several MPP facilities. Many MPP facilities discharging high amounts of nutrients are located in EPA Regions 4 and 5, which provided information on the development of nutrient permit limits and current practices for managing wastewater containing nutrients at MPP facilities. Many of these facilities had permits with water-quality-based ammonia limits more stringent than the existing 2004 MPP ELGs. More than half of the permits reviewed also included water quality-based limits or monitoring requirements for total Kjeldahl nitrogen (TKN), nitrate/nitrite, and/or total phosphorus, which are not regulated under the 2004 MPP ELG.

EPA found that some MPP facilities are performing better than the existing 2004 ELG for nutrient discharges (nitrogen and ammonia), as well as removing phosphorus, which is not regulated under the existing ELG. For nitrogen, the median annual average of 97 direct discharging MPP facilities was 32.8 mg/L, which is well below the 2004 ELG monthly averages of 103 mg/L for poultry and 132 mg/L for meat processors. For ammonia, the median annual average for 119 facilities was approximately 0.5 mg/L, which is far lower than the 4 mg/L required under the ELG regulations. For phosphorus, which is not regulated under the existing ELGs, the median annual average of 140 MPP facilities was less than 2 mg/L indicating that some MPP facilities are meeting water-quality based low phosphorus limits of their NPDES permits using current treatment technologies. These initial results indicated that revised ELGs may be appropriate as the industry is capable of achieving effluent limitations well below the current 2004 regulations.

2. Detailed Study of Meat and Poultry Products (USEPA. 2021. EPA-821-R-21-003)

As a result of the cross-industry review of nutrients in industrial wastewater and the further review of the MPP category, EPA began a detailed study of the MPP industry. The goals of the MPP detailed study were to gain a better understanding of the industry and evaluate whether the ELGs should be revised.

EPA began by collecting publicly available information about the MPP industry. To obtain a list of facilities that may be part of the MPP industry, EPA evaluated industry directories from the U.S. Department of Agriculture (USDA) Food Safety Inspection Service (FSIS), the U.S. Food and Drug Administration (FDA), and the National Renderers Association (NRA). To further develop this list, EPA evaluated information from POTW Annual Reports, EPA's

Integrated Compliance Information System National Pollutant Discharge Elimination System (ICIS-NPDES) database, and EPA's TRI database. EPA also engaged with EPA regions, federal agencies, states, clean water organizations, industry stakeholders, environmental groups, and communities in close proximity to MPP facilities to understand different perspectives on the industry and effects of the industry on communities and to gain insights into the industry.

EPA used the publicly available information to analyze the industry. EPA found that the MPP industry discharges the highest phosphorus levels and second highest nitrogen levels of all industrial categories. EPA found the nutrient discharges are from numerous facilities across the country and that the nutrient pollutants are at concentrations that can be reduced with current wastewater treatment technology. Further, some of the studied facilities were already removing nutrients and achieving effluent concentrations well below the limitations in the existing MPP ELGs.

During the detailed study, EPA compiled a list of over 7,000 facilities from the sources listed above that potentially processed meat and poultry products and might be part of the MPP industry. Of these, EPA estimated that approximately 300 are likely direct dischargers. During the rulemaking process, EPA refined the list to 5,055 MPP facilities, of which 171 are direct dischargers. As the existing ELGs only apply to a subset of the direct dischargers, the 2004 MPP ELGs cover approximately 150 facilities. As mentioned, the wastewater from the direct dischargers has high amounts of nutrients. Around 120 of the estimated 150 direct dischargers discharge to waters listed as impaired, with much of the MPP total nitrogen and total phosphorus load discharging to waters impaired for algal growth, ammonia, nutrients, and/or oxygen depletion.

As the majority of MPP facilities are indirect dischargers, which are not currently subject to national categorical pretreatment standards, EPA also studied POTWs that receive MPP wastewater. In reviewing permits for POTWs that receive MPP wastewater, EPA found the majority do not have limits for nitrogen or phosphorus. Thus, many POTWs may not be removing much of the nutrient load discharged by MPP industrial users because many POTWs do not have tertiary treatment designed to remove nutrients. Additionally, many of the POTWs (73%) had permit violations for pollutants found in MPP wastewater (analysis included BOD, TSS, chlorides, nitrogen, phosphorus, *E. coli*, total residual chlorine (TRC), coliforms, metals, ammonia, and oil & grease). The collected data thus indicates MPP facilities may be causing or contributing to violations of POTW permit limits (EUSEPA. 2021. PA-HQ-OW-2021-0547-0110).

National ELGs can help ensure that all people in the vicinity of industrial direct and indirect discharges receive the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. To assess information related to environmental justice, EPA conducted screening analyses of areas with MPP facilities and found 82% of MPP facilities that directly discharge wastewater to waters of the U.S. are within one mile of census block groups with demographic or environmental characteristics of concern. This indicates that such facilities may

be disproportionately impacting communities of concern and therefore revised wastewater regulations may benefit these communities.[3]

3. Announcement of Rule in Preliminary Effluent Guidelines Plan 15

In 2021, in the *Preliminary Effluent Guidelines Program Plan 15* (Preliminary Plan 15), EPA announced a rulemaking to revise the existing discharge standards for the MPP industry (USEPA. 2021. EPA-821-R-21-003).

4. Litigation and Consent Decree

On December 23, 2022, Plaintiffs Cape Fear River Watch, Rural Empowerment Association for Community Help, Waterkeepers Chesapeake, Waterkeeper Alliance, Humane Society of the United States, Food & Water Watch, Environment America, Comite Civico del Valle, Center for Biological Diversity, and Animal Legal Defense Fund filed a complaint alleging that EPA's failure to revise ELGs and to promulgate pretreatment standards for the MPP category constituted failures to act by statutory deadlines in violation of the CWA and Administrative Procedures Act ("APA") (*Cape Fear River Watch et al. v. United States Environmental Protection Agency*, No. 1:22-cv-03809 (D. D.C)).

Although EPA was in the process of conducting the MPP rulemaking, EPA had not publicly announced any specific timeline for completion. The parties initiated settlement discussions, resulting in a proposed consent decree with deadlines for completion of the rulemaking, which EPA entered into after public notice and comment (88 FR 12930 (Mar. 1,

[3] Characteristics of concern in this analysis are defined as demographic or environmental indexes above the 80th percentile in a state based on data available in the 2020 release of EJSCREEN. Census block groups with one or more indexes above this threshold were considered communities of concern.

2023)). Under the consent decree, EPA has obligations to sign a notice of proposed rulemaking by December 13, 2023 and to sign a decision taking final action on the proposal by August 31, 2025 (Consent Decree, *Cape Fear River Watch et al. v. EPA*, Case No. 1:22-cv-03809-BAH (05/03/23)).

V. Meat and Poultry Products Industry Description

A. General Description of Industry

The MPP point source category includes facilities "engaged in the slaughtering, dressing and packing of meat and poultry products for human consumption and/or animal food and feeds. Meat and poultry products for human consumption include meat and poultry from cattle, hogs, sheep, chickens, turkeys, ducks and other fowl as well as sausages, luncheon meats and cured, smoked or canned or other prepared meat and poultry products from purchased carcasses and other materials. Meat and poultry products for animal food and feeds include animal oils, meat meal and facilities that render grease and tallow from animal fat, bones and meat scraps" (40 CFR 432.1).

Based on industry responses to the 2022 MPP Questionnaire, EPA estimates there are 5,055 MPP facilities currently in operation. Table V-1 shows the estimated number of MPP facilities based on facility process based on the 2022 MPP Questionnaire and other publicly available data sources. "Meat First" refers to facilities that slaughter animals excluding poultry. "Meat Further" refers to facilities that further process animal products excluding poultry. "Poultry First" refers to facilities that slaughter poultry. "Poultry Further" refers to facilities that further process poultry. Facilities that process meat and poultry were classified by the type which they process the most. "Render" refers to facilities that only process meat and poultry offcuts, trimmings, bones, dead animals, scrap materials, and other related usable by-products. For more

information on how facilities were classified, see the *Meat and Poultry Products (MPP) Profile Methodology Memorandum* (USEPA. 2023. DCN MP00306).

Table V-1. Number of Facilities in MPP Industry by Process and Discharge Type

Process	Number of Facilities			
	Direct Dischargers	**Indirect Dischargers**	**Zero Dischargers**	**Total**
Meat First	47	509	270	826
Meat Further	29	2,741	690	3,460
Poultry First	70	168	52	290
Poultry Further	6	169	119	294
Render	19	121	45	185
Total	171	3,708	1,176	5,055
Source: DCNMP00306				

As shown in Table V-1, there are a large number of MPP facilities in each sector. These facilities are located across the country. Although first processors/slaughterhouses tend to be larger, there is a large range in production volumes across the industry. Based on the questionnaire, 171 facilities have NPDES permits and discharge wastewater directly to waters of the U.S. An additional 3,708 facilities discharge wastewater to POTWs, and 1,176 facilities do not discharge process wastewater. MPP effluent discharges contain pollutants including nitrogen, phosphorus, ammonia, oil & grease, BOD, and chlorides.

B. Control and Treatment Technologies

EPA evaluated technologies available to control and treat wastewater generated by the MPP industry. EPA has not identified any practical difference in types of treatment technologies between meat products and poultry products facilities. Some MPP processes result in wastewater streams with higher concentrations of pollutants, but facilities across the industry generally contain the same pollutants, including nitrogen, phosphorus, oil & grease, BOD, TSS, and chlorides.

The pollutants in MPP wastewaters are similar to those in domestic wastewater. POTWs often have similar wastewater treatment technologies as direct discharging MPP facilities. However, some indirect MPP wastewater discharges have pollutant loads that the receiving POTW cannot handle. These indirect discharges may cause passthrough or interference as those terms are defined in EPA's general pretreatment regulations at 40 CFR 403.3(k) and (p). Also, many POTWs are not equipped to effectively treat all pollutants found in MPP wastewater such as nitrogen, phosphorus, and chlorides. Thus, indirect discharging MPP facilities may need to treat their wastewater before sending it to their POTW in order to meet any local limits established by the control authority under EPA's general pretreatment regulations (40 CFR 403).

EPA evaluated available technologies that can be used to treat or remove MPP pollutants, individually and in treatment trains. This section is split into subsections based on type of pollutant removal, including conventional pollutants, phosphorus, nitrogen, pathogens, and chlorides. As the evaluated technologies result in sludge production, technologies for solids handling are also included. Discussions on treatment trains are included within applicable sections.

1. Conventional Pollutant Removal

MPP process wastewater contains oil & grease, TSS, and BOD, which are all conventional pollutants. These pollutants can be removed with primary treatment, which removes floating and settleable solids. Typical treatment technologies include screens and DAF.

a. Screening: Screens are generally the first treatment unit in a wastewater treatment train. Screens are inexpensive and remove large solid particles from the wastewater that may otherwise damage or interfere with downstream equipment and treatment processes. At some facilities, the materials removed by the screens

may be used as raw material at rendering facilities.

b. Dissolved air flotation (DAF): DAF is used extensively in the primary treatment of MPP wastewaters to remove suspended solids and oil & grease. In a DAF unit, air is dissolved into the wastewater, forming small bubbles. As the air bubbles float to the surface, solids attach to the air bubbles, and rise to the top of the unit forming a layer of floating pollutants. A skimmer is used to continuously remove this layer of floating solids, while a bottom sludge collector removes any solids that settle to the bottom. In some facilities, such as renderers, the removed solids can be recycled to the facility as raw materials.

c. Chemical Addition: Polymers, flocculants, and phosphorus precipitating chemicals may be added to, or prior to, the DAF. The chemical addition increases the removal of pollutants from the wastewater. Adding chemicals to remove phosphorus can help facilities meet phosphorus effluent limits. For facilities that recycle materials from the DAF to the facility, chemicals addition may not be possible as this would contaminate the raw material.

2. Biological/Organic Pollutant Removal

BOD, nitrogen, and phosphorus are removed through biological, physical, and chemical processes. Biological processes can be used to achieve low levels of BOD and nitrogen and are commonly used at MPP facilities. Microorganisms used in biological wastewater treatment require phosphorus for cell synthesis and energy transport and typically remove 10 to 30 percent of influent phosphorus. Through biological treatment, organic compounds are broken down with bacteria into products including water, CO_2, N_2, and CH_4.

a. Anaerobic biological treatment: In anaerobic wastewater treatment, facultative

and anaerobic microorganisms reduce organic matter and BOD into gaseous methane and carbon dioxide. The gases may be released into the atmosphere, captured and flared, or used as biogas. Anaerobic treatment systems have negligible energy requirements and can treat high-strength wastewaters. Anaerobic lagoons are a typical anaerobic system used at MPP facilities. Due to the detention time, these lagoons also equalize wastewater flow. The lagoons are not mixed to maintain anaerobic conditions. Anaerobic lagoons can reduce BOD by 95 percent and suspended solids by 95 percent (Johns. 1995[4]; USEPA. 1974[5]; USEPA. 1975[6]).

b. Aerobic biological treatment: In aerobic wastewater treatment, microorganisms require oxygen to degrade organic material into water, carbon dioxide, and organic compounds. Aerobic degradation is faster than anaerobic degradation. Soluble BOD reductions up to 95 percent are possible. Aerated lagoons have fixed, floating, or diffused air systems to aerate the water. Aerobic lagoons (naturally aerated systems) use algae to aerate the system through photosynthesis.

c. Anoxic biological treatment: Anoxic wastewater treatment systems are oxygen

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[4] Johns, M.R.1995. *Developments in wastewater treatment in the meat processing industry: A review.* Bioresource Technology 54. EPA-HQ-OW-2002-0014-2410. DCN 300232

[5] USEPA (U.S. Environmental Protection Agency). 1974, February. *Development Document for Effluent Limitation Guidelines and New Source Performance Standards for the Red Meat Processing Segment of the Meat Product and Rendering Processing Point Source Category*. Washington, D.C. DCN MP00348.

[6] USEPA (U.S. Environmental Protection Agency). 1975, April. *Development Document for Effluent Limitation Guidelines and New Source Performance Standards for the Poultry Segment of the Meat Product and Rendering Processing Point Source Category*. Washington, D.C. DCN MP00349.

deficient, and bacteria break down nitrogenous compounds into oxygen and nitrogen gas.

d. Activated sludge: This system includes an aeration tank followed by a settling tank. Settled solids from the second tank are recycled back into the aeration tank. Under optimal conditions, this process can achieve 95 percent reductions in BOD, suspended solids, and reductions in ammonia nitrogen (Johns. 1995; USEPA. 1974; USEPA. 1975).

e. Sequencing batch reactor (SBR): An SBR completes the activated sludge process in a single reactor. The system first fills with wastewater, then the reaction in which bacteria break down organic compounds in the presence of oxygen occurs for some time, then the system is given time to settle and separate the microorganisms from the treated effluent, and then the tank is discharged. SBR systems provide high removal rates of BOD and suspended solids, can be designed for nitrification, and can remove nitrogen and phosphorus. SBRs are ideal for low flow processes as they do not need to run continuously, and the systems allow for operational and loading flexibility (Glenn et al. 1990).[7]

f. Multistage biological treatment for nitrogen removal: Nitrogen removal is a two-step process: nitrification and denitrification.

i. Nitrification is a two-step aerobic process. First, ammonia is oxidized into nitrite by Nitrosomonas bacteria. Then, nitrite is oxidized into nitrate

[7] Glenn, S.L., R.T., Norris, Jr., and J.T. Sommerfield. 1990. *Discrete-event simulation in wastewater treatment.* Journal of Environmental Science and Health, 25 (4).

by Nitrobacter bacteria (Metcalf & Eddy, Inc. 1991).[8]

ii. Denitrification: Nitrite and nitrate are reduced by heterotrophic bacteria into nitrogen gas in anaerobic conditions. A carbon source, such as methanol, may need to be added to keep the microbes healthy.

Biological treatment systems are often used in series to achieve high rates of nitrogen removal. Wastewater flows from one system to the next, with recycle streams and returned activated sludge returning to various locations of the system. Some examples include:

i. Modified Ludzack-Ettinger (MLE): The MLE is a two-stage system in which an anoxic stage is followed by an aerobic stage, before wastewater goes to a clarifier. Mixed liquor with high levels of nitrate is recycled from the aerobic stage back to the influent. Activated sludge from the clarifier is also recycled back to the influent. The MLE process removes most of the BOD and can achieve a nitrogen removal of 80 percent.

ii. Bardenpho: This is a four-stage process: anoxic, aerobic, anoxic, aerobic, followed by a secondary clarifier. Mixed liquor with high levels of nitrate is recycled from the first aerobic stage back to the first anoxic stage. Activated sludge from the clarifier is recycled back to the influent. Nitrification occurs primarily in the second stage (aerobic). Denitrification occurs in the first and third stages (anoxic). The final aeration stage

[8] Metcalf & Eddy, Inc. 1991. *Wastewater Engineering: Treatment, Disposal, and Reuse*. 3rd Edition, McGraw-Hill, Inc. DCN MP00334

removes nitrogen gas from the system and increases the concentration of dissolved oxygen. The four-stage Bardenpho process achieves higher rates of nitrogen removal compared to the two-stage MLE process.

iii. Modified Bardenpho: This is a five-stage process: anaerobic, anoxic, aerobic, anoxic, aerobic, followed by a secondary clarifier. As in the Bardenpho process, mixed liquor with high levels of nitrate is recycled from the first aerobic stage back to the first anoxic stage and activated sludge from the clarifier is recycled back to the influent. The anaerobic stage at the beginning of the system results in biological phosphorus removal. Phosphate-accumulating organisms (PAOs) are recycled from the aerobic stage in the mixed liquor to the anaerobic stage. In the following aerobic stages, PAOs uptake large amounts of phosphorus (USEPA. 2021. EPA 830-R-01-001).

iv. Other: There are many other processes that use multiple stages of treatment to remove nitrogen. These include A2/O, step feed, University of Capetown (UCT) processes, oxidation ditches, and the Schreiber process, amongst others (USEPA. 2004. EPA-821-R-04-011).

g. Membrane bioreactor (MBR): MBRs use membranes to separate liquids and solids. The liquid stream then passes through anoxic and aerobic zones, in similar processes to the biological treatment systems described above. As the membranes greatly reduce the suspended solids in the liquid stream, MBR removes nitrogen and phosphorus (USEPA. 2009. EPA/600/R-09/012).

h. Enhanced Biological Phosphorus Removal: Microorganisms used in biological

wastewater treatment require phosphorus for cell synthesis and energy transport. In the treatment of typical domestic wastewater, between 10 and 30 percent of influent phosphorus is removed by microbial assimilation, followed by clarification or filtration. However, phosphorus assimilation in excess of requirements for cell maintenance and growth, known as luxury uptake, can be induced by a sequence of anaerobic and aerobic conditions (Metcalf & Eddy, Inc. 1991). As explained above, the modified Bardenpho process removes phosphorus biologically.

3. Phosphorus Removal

As mentioned in the biological/organic pollutant removal section, some phosphorus is removed in biological treatment processes. To achieve low levels of phosphorus, chemical addition and/or tertiary filters can be used.

a. Chemical addition: Phosphorus can be removed from wastewater by precipitation using metal salts [ferric chloride, aluminum sulfate (alum)] or lime. Polymers may also be added to increase the removal efficiency. The chemicals may be added prior to or in the DAF, in primary clarifier effluent, in biological treatment processes prior to secondary clarification, or after secondary clarification. The precipitated phosphorus is removed with other biosolids (Metcalf & Eddy, Inc. 1991).

b. Tertiary Filters: Filters following chemical phosphorus removal can be used to achieve high removal rates of phosphorus. Tertiary filtration may include sand filters, ion-exchange, membranes, and others.

4. Pathogen Removal

Disinfection destroys remaining pathogenic microorganisms and is generally required for all MPP wastewaters being discharged to surface waters. Chlorination/dechlorination, Ultra-Violet (UV), and some filters can be used to meet effluent limits for pathogens and to inactivate pathogenic microorganisms prior to discharge to surface waters.

a. Chlorination/dechlorination: Chlorine disinfects wastewater through oxidation reactions with cellular material which results in the destruction of pathogens. Mixing and contact time in a chlorine contact chamber are critical factors to ensure proper disinfection. The chlorine compounds commonly used for wastewater disinfection are chlorine gas, calcium hypochlorite, sodium hypochlorite, and chlorine dioxide (Metcalf & Eddy, Inc. 1991). Chlorine residuals are toxic to aquatic life, so dechlorination is often necessary. Sulfur dioxide can be added, as it reacts with both free chlorine and chloramines with chloride ions, lowering chlorine residuals (USEPA, 1999. EPA 832-F-99-062).

b. Ultra-Violet (UV): Radiation emitted from UV light is an effective bactericide and virucide and does not generate any toxic compounds. Wavelengths between 250 and 270 nm inactivates cells (USEPA, 1999. EPA 832-F-99-064). UV lamps can be submerged in the wastewater or suspended outside the wastewater.

c. Tertiary Filtration: Filters and membranes with pore sizes smaller than pathogens can be used to remove pathogens from wastewater. Ultrafiltration, membranes, and reverse osmosis are options.

5. Chlorides Removal

Some MPP processes, including hides processing, meat and poultry koshering, and further processing techniques, such as curing, brining, and pickling, commonly produce

wastewater streams with high levels of chlorides. Some facilities engage in water softening, which can also produce high chlorides wastestreams. Wastewater treatment technologies commonly found at POTWs and many MPP facilities do not remove chlorides. The optimal chlorides treatment technologies for a facility depends on wastewater strength, climate, land availability, and cost. High chloride wastestreams may be able to be separated from other wastestreams, which can reduce costs and energy required for treatment.

a. Hauling: Facilities may choose to haul high chloride wastewater (also called brine) offsite in tanker trucks. The wastewater may be taken to a renderer where it may be used for production purposes, transported to a facility equipped to treat and/or dispose of brine, or taken offsite for deep-well injection or other means of disposal. Hauling can be costly as compared to other options, especially for large amounts of wastewater.

b. Evaporation ponds: Brine wastewater may be disposed into shallow ponds exposed to the sun. The water evaporates, leaving salt. The salt will need to be emptied from the ponds occasionally to allow the ponds to be reused. This technology relies on solar evaporation and is best in dry/semi-dry climates. Land space for the ponds is also necessary. Due to the potential for groundwater pollution, the ponds should be lined (Panagopoulos et al. 2019).[9]

c. Evaporation systems/Crystallizers: Brine water is concentrated to near saturation, which results in salt crystallization. Heat is used to evaporate the water. The

[9] Panagopoulos, A., Haralambous, KJ., and Loizidou, M. 2019. *Desalination brine disposal methods and treatment technologies – A review.* Science of The Total Environment, 693. https://doi.org/10.1016/j.scitotenv.2019.07.351

systems are often costly as compared to other options and corrosion is common if proper materials of construction are not utilized (Zhang et al. 2021).[10]

d. Deep-well injection: Fluids such as brine/salt water can be injected underground into porous geological formations. The well is normally 500 to1500 meters deep. Constructing a well can be costly, and deep-well injection is not allowed in some parts of the U.S. (Panagopoulos et al. 2019).

6. Solids Handling

Some wastewater treatment technologies produce industrial sludge. In the MPP industry, sludge is primarily generated by the DAF and clarifiers. The sludge contains oil & grease, organic materials, nitrogen, phosphorus, and chemicals/polymers added in the treatment system. The sludge may have a high-water content, which can be reduced, to reduce volume and save hauling and landfilling costs. Common dewatering technologies include gravity thickening units and the belt filter press. The sludge may be incinerated, land applied, or landfilled, depending on state, local and federal regulations and disposal method availability.

VI. Data Collection

A. Information from the Meat and Poultry Products Industry

The Agency evaluated the following databases online to locate data and information to support regulatory development: The Agency's ICIS-NPDES database, USDA's Food Safety and Inspection Service's Hazard Analysis and Critical Control Point (HACCP) Databases, the 2020 U.S. Census of Manufactures, Dun & Bradstreet (D&B) Hoover's database, and Experian's

[10] Zhang, C., Shi, Y., Shi, L., Li, H., Li, R., Hong, S., Zhuo, S., Zhang, T., Wang, P. 2021. *Designing a next generation solar crystallizer for real seawater brine treatment with zero liquid discharge.* Nature Communications, 12. https://www.nature.com/articles/s41467-021-21124-4

Business TargetIQ database. In addition, the Agency conducted a thorough collection and review of secondary sources, which include data, reports, and analyses published by government agencies; reports and analyses published by the MPP industry and its associated organizations; and publicly available financial information compiled by both government and private organizations.

EPA met with or consulted the following organizations for industry information including facility names, addresses and contact information: National Cattlemen's Beef Association, National Pork Producers Council, North American Meat Institute, the North American Renderers Association, and the U.S. Poultry & Egg Association.

The documents cited above were all used by EPA in developing the industry profile, a survey sampling frame, and for stratifying the survey sampling frame. In addition to these publications, EPA examined many other documents that provided useful overviews and analysis of the MPP industry. EPA also conducted general Internet searches by company name.

1. Survey

Publicly available data on MPP facilities are limited. EPA has based the population of MPP facilities on data largely from the USDA FSIS. The FSIS dataset compiles information on facility name and location, type(s) of meat and poultry processed, and limited details on size (both employees and amount processed). USDA FSIS does not report details specific to wastewater generation or wastewater treatment. EPA also included a list of renderers from the NRA, and MPP facilities in the ICIS-NPDES dataset, in developing the list of MPP facilities. These data are limited since the NPDES data generally includes only those facilities directly discharging wastewater, although some individual states require pretreatment permits to also be reported.

In order to supplement publicly available data sources, EPA conducted a survey of the MPP industry. EPA developed two questionnaires to collect site-specific technical and economic information to provide a more robust record to support developing regulatory options and conduct analyses required by statutes and executive orders. EPA's Office of Water administered a Census Questionnaire and a Detailed Questionnaire to facilities engaging in meat and poultry processing, including those currently regulated under 40 CFR 432, and facilities that discharge wastewater directly to waters of the U.S., indirectly to POTWs, or do not discharge wastewater. The Census Questionnaire was administered as a census of the industry to confirm the industry population, as well as general information on the industry, including:

- Processing details (including type of meat or poultry and type of processing),
- Type and size (both production and employees) of the facility, and
- Wastewater generation and treatment information.

EPA used information collected through the Census Questionnaire to confirm the list of facilities that fall within the MPP industry and to identify which MPP facilities generate, treat, and/or discharge wastewater. A statistically representative subset of different types of MPP facilities were asked to complete a more detailed set of questions. This Detailed Questionnaire collected the same information as the Census Questionnaire and additional details on processing operations, types and amount of wastewater generated by operation, wastewater treatment details, and economic data. In addition, EPA collected and analyzed wastewater samples from six MPP facilities that received the Detailed Questionnaire to characterize raw waste streams, wastewater treatment systems, and treated effluent for pollutants of interest.

At the outset of EPA's development of the questionnaires, based on data primarily from USDA FSIS and ICIS-NPDES, EPA estimated the MPP industry had between 7,000 and 8,000

facilities. Because no one data source collects information from all MPP facilities, the exact number was unclear at the time the questionnaires were developed. EPA refined the list of facilities by identifying additional or duplicate facilities and working with trade associations to identify facilities that do not process meat or poultry. EPA conducted a statistical sample of facilities on the list and sent 1,565 unique facilities the Detailed Questionnaire and the other facilities were sent the Census Questionnaire. EPA stratified the list of facilities (i.e., the sampling frame) into groups based on the stage of operation (i.e., slaughter, further processor, renderer), the meat type (i.e., meat, poultry), and production, to increase sample precision. Each facility fell within one or more strata. EPA estimated the number of facilities to sample from each stratum based on acceptable error, confidence level, and expected response rate using Cochran's sample size formula. The target sample size was 1,633 and these 1,565 represent the 1,633 facility-strata combination as some facilities fell in multiple strata and represent multiple strata. The Detailed Questionnaire included all questions in the Census Questionnaire. Both questionnaires were issued at the same time and requested data for 2021. Data from 2021 represents the most recent year for which complete technical and economic data were available as EPA administered the survey in 2022. The Detailed Questionnaire also asked for some data from 2017 and 2019 to evaluate recent trends in industry operation and economics. EPA administered the data collection under the authority of Section 308 of the Federal Water Pollution Control Act, 33 U.S.C. §1318 and in accordance with the Paperwork Reduction Act, 44 U.S.C. §§ 3501 – 3521[11]. The questionnaires can be found in Docket ID Number EPA-HQ-OW-2021-0736. Additional details on the questionnaire methodology can be found in the TDD.

[11] EPA ICR No. 2701.01, OMB Control No. 2040-NEW

2. Stakeholder Meetings and Outreach

EPA encouraged the participation of all interested parties throughout the development of the MPP rule. The Agency conducted outreach to trade associations that represent the vast majority of the facilities that will be affected by the rule. EPA met with various stakeholders to discuss aspects of the regulation development. EPA also participated in industry meetings and gave presentations on the status of the regulation development. A comprehensive list and description of these meetings can be found in the TDD. EPA also met with environmental groups and tribal communities and conducted environmental justice outreach. For details on these meetings, see the *Environmental Assessment for the Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category* (U.S. EPA, 2023. EPA 821-R-23-012).

B. Economic Data

EPA analyzed the economic impact of the proposed regulation on both discharging facilities and the firms that own them. These analyses form the basis of EPA's proposed determination that the regulation is economically achievable. EPA also analyzed larger market wide impacts on production levels, prices, and employment. EPA relied on existing sources of economic data for these analyses and to supplement facility and firm information obtained from the industry survey.

1. Facility and Firm-Level Economic Data

When questionnaire responses were available for a facility and its owner, that information was used for the impact analyses, such as the closure analyses and the cost-to-revenue screening analyses that are described in detail in section VIII. When information from the questionnaire was not available, however, EPA relied on two primary sources of external

data. The first data source was the USDA FSIS facility-level information. This information was used to supplement facility production and employment estimates. The second data source was D&B Hoovers database of business information. This source was used to supplement revenue, employment, and ownership information at both the firm and facility level.

2. Industry and Sector-Level Economic Data

After estimating facility and firm level costs, EPA analyzed the potential effect on market prices for major industry commodities such as, beef, pork, broiler chickens, and turkeys. EPA also analyzed the potential for changes to national and regional production-levels for these commodities. EPA estimated changes to both short-term and long-term employment levels. Finally, EPA also estimated potential changes to the barriers-to-entry for this industry as well as industry consolidation trends.

The primary data source for the sector and industry-level analyses is USDA's Economic Research Service (ERS). The ERS analyzes trends and emerging issues in the agricultural sector and regularly publish data on farm sector performance and farm households' well-being; farm size and concentration; market analysis, data, and projections on commodity supply, demand, and prices; and Federal farm policies. EPA also used results from agricultural market studies published in peer reviewed journals.

C. Other Data Sources

EPA conducted several data collection activities in support of developing the proposed rule. EPA used these data to develop an industry profile, evaluate industry subcategorization, determine wastewater characteristics and potential pollution control technologies, review potential pollutant load reductions and costs associated with certain technology options, review

environmental impacts associated with discharges from this industry, and develop pollutant limitations.

1. Site Visits

During 2022, EPA conducted site visits at nine different MPP facilities, specifically three meat facilities, five poultry facilities, and one independent rendering facility. In selecting candidates for site visits, EPA attempted to identify facilities with advanced wastewater treatment technologies across the different types of operations performed in the industry. During each visit, EPA collected information on facility process operations including recent changes and upgrades, wastewater treatment operations, water usage, and waste management operations. See the TDD for additional details on site visits.

2. Wastewater Sampling

Between August and November 2022, EPA conducted a sampling program at six MPP facilities located throughout the United States to collect wastewater characterization data and treatment performance data.

EPA selected facilities based on nitrogen and phosphorus discharge data reported in DMRs and wastewater treatment information obtained from permits, permit application data, and site visits. EPA selected three meat facilities, two poultry facilities, and one independent rendering facility with low discharges of nutrients and/or phosphorus. All selected facilities were direct discharge facilities.

During each sampling episode, EPA collected wastewater samples for five consecutive days. Sampling points varied by facility and wastewater treatment system, but in general, EPA collected the following samples at all selected facilities:

- Treatment system influent (untreated wastewater). Sample collected downstream of screening (if present) to ensure large solids were removed to facilitate sampling.
- Effluent from primary treatment (or influent to biological treatment). Primary treatment typically included a DAF unit or anaerobic basin/lagoon.
- Effluent from biological treatment (or influent to tertiary treatment). Biological treatment typically included complete nitrification/denitrification.
- Effluent from tertiary treatment (e.g., filters, disinfection, and/or chlorination/dechlorination), if tertiary treatment was in place.
- Final effluent from the treatment system, if different than effluent from last level of treatment (e.g., reaeration basin).

EPA also collected operations data during the sampling episode to allow for an engineering assessment of the design, operation, and performance of treatment systems at MPP facilities. Specifically, EPA collected system design information, as well as daily operations data (e.g., production, wastewater flow, chemical additions, sludge generation). See the TDD and facility-specific sampling episode reports (USEPA. 2023. DCN MP00326, DCN MP00333, DCN MP00332, DCN MP00317, DCN MP00315, DCN MP00311) for details on the sampling points selected for each facility and the operational data collected.

Based on conversations with industry, most MPP facilities use drinking water sources (public water supplies or well water) for all source water. Furthermore, facilities may treat their source water with sodium hypochlorite (NaOCl) or water softeners before use as the facilities are generating food-grade products (USEPA. 2022. DCN MP00123, DCN MP00276, DCN MP00138, DCN MP00142). For these reasons and because EPA does not expect drinking water

to contain nutrients or other pollutants at levels found in MPP wastewater, EPA did not collect source water samples.

EPA identified pollutants of interest in MPP wastewater based on data from the previous MPP rulemaking (USEPA, 2004) and literature searches. Below is a list of pollutant or pollutant groups chosen by EPA for the MPP sampling program.

- Biochemical oxygen demand (BOD) and carbonaceous biochemical oxygen demand (CBOD)
- Chemical Oxygen Demand (COD)
- Inorganic anions
- Oil & grease
- Nitrogen compounds
- Total and ortho-phosphorus
- TSS and TDS
- Total organic carbon (TOC)
- Bacteria (fecal coliform, Escherichia coli (E. coli)) and enterococci)
- Metals

See the *Pollutants of Concern (POC) Analysis for the Meat and Poultry Products (MPP) Proposed Rule* (USEPA. 2023. DCN MP00190), which presents a table of the pollutants by analytical method and corresponding baseline values. See the *Generic Sampling and Analysis Plan (GSAP)* (USEPA. 2023. DCN MP00136) and the facility-specific sampling and analysis plans (SAPs) (USEPA. 2023. DCN MP00149, DCN MP00137, DCN MP00150, DCN MP00151, DCN MP00152, DCN MP00153) for more information on sampling procedures. EPA has

included in the MPP Rulemaking Record all information collected for which each facility has not asserted a claim of CBI or which would indirectly reveal information claimed to be CBI.

VII. Proposed Regulation

A. Description of the Options

As previously described, EPA's 2019 cross-cutting review of nutrient discharges from 59 industrial categories found that the MPP point source category discharged some of the highest nitrogen and phosphorus levels of all industries. OW initiated a detailed study in 2020 and announced a rulemaking to revise the ELGs in EPA's Preliminary Plan 15 based on information suggesting facilities can do more to control nutrients and other pollutants and that revisions could reduce discharges affecting underserved and overburdened communities (USEPA. 2021. EPA-821-R-21-003). EPA identified technologies currently in use by MPP facilities that can further reduce nitrogen discharges below the levels that are found in the existing ELGs, which were last revised in 2004. In addition, MPP facilities are currently using technologies to remove phosphorus, which is not regulated under the existing MPP ELGs. This proposal evaluates three regulatory options as shown in Table VII-2 of this preamble. While developing these regulatory options, EPA's goal was to reduce pollutant discharges to surface waters, reduce and/or eliminate interference and passthrough at POTWs receiving MPP wastewater, and establish effluent limits and pretreatment standards based on technologies that are available and economically achievable for the industry, while minimizing impacts to small business.

EPA considered and continues to consider ways to minimize impacts to small business when developing the regulatory options consistent with the statutory factors. As described in Section V, EPA identified 5,055 MPP facilities generating process wastewater, and 3,879 of these facilities discharge to waters of the U.S. directly or indirectly. EPA carefully considered

impacts of new or revised effluent limitations and pretreatment standards on small business by using facility production thresholds to distinguish smaller facilities with lower revenues from larger facilities. In developing the options, EPA evaluated differing thresholds for applicability of the proposed rule provisions to evaluate how impacts to small business would vary as more and smaller facilities would be subject to new and/or more stringent effluent limitations and pretreatment standards. The record supports that the impacts to small business from the preferred option (Option 1) would not be significant (see Section XVI.C). Under Option 1, most MPP facilities (79 percent) fall below the proposed production thresholds, and therefore, would have no new limitations. The proposed new limitations under Option 1 would impact 844 facilities, representing 21 percent of the total number of MPP facilities discharging to waters of the U.S. and to POTWs.

Under the most expansive option proposed (Option 3), new limitations would impact 1,618 facilities of the 3,879, or 42 percent of facilities discharging to waters of the U.S. and to POTWs. EPA also considered minimizing impacts to small businesses by basing effluent limitations on lower cost wastewater treatment technologies for facilities with lower production. For example, in Option 3, indirect discharging facilities producing below 5 million pounds per year would have no new requirements and indirect discharging facilities producing between 5 and 30 million pounds per year would have effluent limitations based on lower cost pretreatment technologies consisting of screening and DAF to control conventional pollutants only. Facilities producing 30 million pounds per year or greater would have additional requirements that include both conventional pollutant removal and nitrogen and phosphorus removal, and this would impact only 21 percent of indirect discharging facilities.

Table VII-1 shows the total number of MPP facilities that have discharges followed by the number of facilities that EPA estimates would incur costs to comply with the requirements of the various regulatory options. All options build on the existing MPP ELGs and are based on three technologies: conventional pollutant (e.g., BOD, TSS, Oil & Grease) removal by screening and DAF, phosphorus removal by chemical precipitation, and nitrogen removal by biological treatment to achieve full denitrification. Each option incrementally increases the subcategories and/or number of facilities to which the effluent limitations and pretreatment standards would apply. Nitrogen and phosphorus are two primary pollutants to be reduced with these regulatory options and the processes involved in removal are briefly described next.

Table VII-1. Number of MPP facilities- Total Discharging Facilities and Number that Would Incur Costs Under the Requirements of the Regulatory Options.

Regulatory Option	Discharge Type	Total # dischargers	Total # facilities incurring costs under ELG
Option 1	Directs	171	126
	Indirects	3,708	719
	Total	**3,879**	**845**
Option 2	Directs	171	126
	Indirects	3,708	719
	Total	**3,879**	**845**
Option 3	Directs	171	135
	Indirects	3,708	1485
	Total	**3,879**	**1,620**

Nitrogen removal is carried out through a three-step biological process: (1) the conversion of ammonia from organic nitrogen by hydrolysis and microbial activities, called ammonification; (2) the aerobic conversion of ammonia to nitrate by reacting the ammonia with oxygen in a process called nitrification; and (3) the conversion of nitrate to nitrogen gas by reacting the nitrate with organic carbon under anoxic conditions in a process called

denitrification. Phosphorus can be removed from wastewater by biological uptake by microorganisms and by chemical precipitation with a metal cation. Depending on the target concentration, a plant process might employ both technologies. Such a combined approach might be of particular benefit if the target concentration is very low and the starting concentration is high. In such a case, biological removal is used to remove the bulk of the phosphorus, and chemical polishing follows to achieve the final concentration; such an approach tends to reduce sludge formation from denitrification (USEPA. 2008. EPA 832-R-08-006).

For direct dischargers, all proposed options would establish revised effluent limitations that build upon the wastewater treatment systems that are the basis of the existing MPP ELGs. The ELGs that currently apply to these facilities are based on screens, DAF, anaerobic lagoons, biological treatment to achieve nitrification and partial denitrification, and chlorination/dechlorination. The effluent limitations for direct dischargers in today's proposal are based on more complete denitrification. Therefore, large facilities that already have denitrification technology for nitrogen removal would likely need to add more complete denitrification and chemical phosphorus removal technologies to comply with the proposed effluent limitations for total nitrogen and phosphorus. Smaller facilities could be subject to nutrient limits under the lower production thresholds in Option 3 and would presumably need to install this technology for the first time, since these facilities are currently below the applicability threshold for the existing ELG.

Since there are no national pretreatment standards applicable to the MPP category, indirect discharging facilities are currently only subject to any local limits established by the control authority under the general pretreatment regulations at 40 CFR 403. Wastewater treatment in place at indirect discharging facilities therefore ranges from no treatment to some

treatment. Treatment ranges from basic treatment, such as screens and oil water separators, or more complex treatment such as DAF, anaerobic lagoons, biological treatment to achieve nitrification and denitrification, and phosphorus removal. To meet the proposed conventional pollutant pretreatment standards under the preferred Option 1, which is based on screens and DAF technology, existing indirect discharging facilities with no treatment in place now would likely need to install similar technologies. To meet the nitrogen and phosphorus pretreatment standards contained in Options 2 and 3, many indirect dischargers would likely need to add additional treatment such as anaerobic lagoons, biological treatment to achieve nitrification and full denitrification, and chemical phosphorus removal technologies. However, as described later in this preamble, EPA is proposing to include "conditional limits" under Options 2 and 3 which would allow an exemption from nutrient pretreatment standards for indirect dischargers that are discharging to POTWs that have nutrient removal capabilities that result in equivalent nutrient removal.

Option 1 is EPA's preferred option and builds on the existing MPP ELGs by adding new effluent limitations for large direct and indirect dischargers. Option 1 would include new phosphorus limits for large direct dischargers based on chemical phosphorus removal technology, more stringent nitrogen limits for large direct dischargers based on full (not partial) denitrification, and new conventional pollution limits (pretreatment standards) for large indirect dischargers based on very basic wastewater treatment such as screening and DAF technologies to prevent passthrough and interference at POTWs. EPA requests comment on the concept of allowing POTWs, control authorities, or permit authorities to waive, under certain circumstances, the new conventional pollutant limits for large indirect dischargers. Although EPA is unclear how this would work in practice, it is possible that POTWs not experiencing

passthrough and interference may be able to waive these pretreatment standards while continuing to prevent passthrough and interference. Additionally, POTWs that perform denitrification may want to waive BOD limits for their MPP industrial users so they can receive more carbon to support bacterial conversion of nitrates to nitrogen gas. EPA requests comment both on whether such waivers should be allowed, and the demonstration necessary to justify such waivers.

Large refers to the existing rule production thresholds of greater than 50 million pounds per year of finished product produced for meat further processors (Subcategories F-I) and in terms of LWK for meat slaughtering (Subcategories A-D). For poultry slaughtering (Subcategory K) large also refers to existing rule production thresholds of greater than 100 million pounds per year of LWK, greater than 7 million pounds per year of finished product produced for poultry further processors (Subcategory L), and 10 million pounds per year of raw material processed for renderers (Subcategory J).

Option 2 builds on (includes all requirements in) Option 1 and would add nitrogen and phosphorus pretreatment standards for some large indirect discharging slaughterhouses and renderers. Specifically, Option 2 would add phosphorus and nitrogen limits for indirect discharging slaughterhouses producing greater than or equal to 200 million pounds per year and indirect discharging renderers producing greater than or equal to 350 million pounds per year.

Option 3 extends the requirements for both direct and indirect discharging facilities under Options 1 and 2 to smaller facilities. For direct discharging facilities, Option 3 would apply phosphorus and nitrogen limits to all subcategories producing greater than or equal to 10 million pounds per year, and additional more stringent nitrogen limits in all subcategories producing greater than or equal to 20 million pounds per year. For all indirect discharging facilities, Option 3 would require conventional pollutant limits for facilities producing greater than 5 million

pounds per year, and nitrogen and phosphorus limits for facilities producing greater than 30 million pounds per year.

Additionally, all options would include stricter fecal coliform limits for direct discharging facilities, based on chlorination/dechlorination and UV disinfection (which is the same technology basis for the existing limitations for fecal coliform).

In addition to the options described above, EPA solicits comment on including three additional requirements in any final rule. First, limitations on the discharge of chlorides by establishing a zero discharge of pollutants requirement for certain high chlorides wastestreams. The technology basis for this requirement is segregation of these wastestreams from other process wastewater streams and management via sidestream evaporation. EPA solicits comment on including this provision for all facilities (both direct and indirect) producing more than 5 million pounds per year with high chlorides processes. Second, EPA solicits comment on conditional limitations for phosphorus and nitrogen discharges from indirect dischargers under Options 2 and 3. Third, EPA solicits comment on limitations on *E. coli* for direct discharging facilities.

B. Proposed Changes to Subcategories

As described above, EPA proposes to revise ELGs for facilities in the following MPP subcategories: Simple Slaughterhouses (Subcategory A), Complex Slaughterhouses (Subcategory B), Low-Processing Packinghouses (Subcategory C), and High-Processing Packinghouses (Subcategory D). Although the proposed options may establish differing production thresholds for applicability under these subcategories, EPA proposes to leave the definitions of these subcategories unchanged because the definitions are not based on production

thresholds and effluent limitations in the proposed regulatory options would apply to a subset of these subcategories as they are currently defined.

The Agency is not proposing revised ELGs for the small processor category (Subcategory E). Subcategory E is defined based on a size threshold of no more than 6,000 pounds per day (2.19M pounds per year) of any type or combination of finished product. EPA also proposes to leave applicability definitions for Subcategory E unchanged.

EPA is proposing revised limitations and new pretreatment standards for facilities in the following MPP subcategories: Meat Cutters (Subcategory F), Sausage and Luncheon Meats Processors (Subcategory G), Ham Processors (Subcategory H), and Canned Meats Processors (Subcategory I). Subcategories F-I are currently defined based on a production rate greater than 6,000 pounds per day (2.19 million pounds per year), and EPA proposes to leave the definitions for these subcategories unchanged. However, EPA proposes to apply effluent limitations to a subset of these subcategories based on production thresholds, which could change under the proposed regulatory options.

EPA is also proposing retaining the Renderer (Subcategory J) subcategory and revising the limitations and proposing new pretreatment standards for facilities in this subcategory. EPA proposes to leave the applicability definitions for Renderers (Subcategory J) unchanged as facilities using raw material at rates greater than 10 million pounds per year. However, EPA proposes to apply effluent limitations to a subset of these subcategories based on production thresholds, which could change under the proposed regulatory options.

EPA is proposing establishing revised limitations and new pretreatment standards for facilities in the poultry subcategories. The poultry subcategories (Subcategory K, Poultry First Processing and Subcategory L, Poultry Further Processing) are not defined based on production

and EPA proposes to leave the applicability definitions unchanged. However, EPA proposes to apply effluent limitations to a subset of these subcategories based on production thresholds, which could change under the proposed regulatory options.

In summary, EPA is retaining the existing subcategories and proposing revisions to applicable effluent limitations and addition of new pretreatment standards for most of these subcategories. The proposed ELGs apply to subsets of facilities in each subcategory based on production thresholds. In establishing the original ELGs for this industry and in the 2004 revisions, EPA broke the industry down into subcategories with similar characteristics. This breakdown recognized the major differences among companies within the industry, which might reflect, for example, different processes or economies of scale. Subdividing an industry into subcategories results in more tailored regulatory standards, thereby increasing regulatory predictability and diminishing the need to address variations among facilities through a variance process (*Weyerhaeuser Co. v. Costle*, 590 F. 2d 1011, 1053 (D.C. Cir. 1978)). EPA proposes to retain the subcategories in the rule as they reflect differences in processes and wastewater strength and composition and EPA has not identified any additional processes or changes in processes since the 2004 rulemaking that would warrant revision of the existing subcategories or consideration of any additional subcategories.

In addition to some specific requests for comment included throughout this proposal, EPA solicits comment on all aspects of this proposal, including the information, data, and assumptions EPA relied upon to develop the three regulatory options, as well as the proposed effluent limitations and pretreatment standards for existing and new facilities, and additional provisions (see Section F below) included in this proposal.

Table VII-2. Summary of Regulatory Options

	Direct dischargers		**Indirect dischargers**	
	Technology basis	**Applicable facilities**	**Technology basis**	**Applicable facilities**
Option 1	Adds to existing ELG: full denitrification, chemical phosphorus removal, filter	> 50 million lbs/yr of finished product produced for meat further processors, > 50 million lbs/yr LWK for meat slaughtering, >100 million lbs/yr of LWK for poultry slaughtering, >7 million lbs/yr of finished product produced for poultry further processors, >10 million lbs/yr of raw material processed for renderers.	Conventional pollution limits based on screening/grit removal, DAF, and dewatering/solids handling	> 50 million lbs/yr of finished product produced for meat further processors, > 50 million lbs/yr LWK for meat slaughtering, >100 million lbs/yr of LWK for poultry slaughtering, >7 million lbs/yr of finished product produced for poultry further processors, >10 million lbs/yr of raw material processed for renderers.
Option 2	Same technology as Option 1	Same facilities as Option 1	Same technologies as Option 1 plus anaerobic lagoon (BOD pretreatment), activated sludge (nitrification and full denitrification), chemical P removal, filter	Option 1 facilities plus slaughterhouses producing >=200 million lbs/yr and renderers processing >=350 million lbs/yr raw material
Option 3	Same technology as Option 1	Phosphorus and nitrogen limits for all direct discharging facilities producing >= 10 million lbs/yr, and more stringent nitrogen limits to all facilities producing >=20 million lbs/yr.	Same technology as Option 2	Conventional limits for facilities producing >5 million lbs/yr plus nitrogen and phosphorus limits for all facilities >30 million lbs/yr

C. Rationale for the Preferred Option (Option 1)

Considering the statutory criteria and factors described in Section IV above, EPA proposes to revise the ELGs based on BPT, BCT, BAT, PSES, PSNS, and BADCT (for NSPS) based on the technologies described in its preferred Option 1. EPA also solicits comment on the other proposed options (Options 2 and 3), and any other permutation of these options, although they are not the preferred option in this proposed rule for the reasons discussed in section VII. E below.

As described in section IV, the CWA defines two increasingly stringent levels of control to be used for developing limits for classes of pollutants and specifies factors that need to be considered. BPT is the first level of control and applies to all pollutants *(Southwestern Electric Power Co. v. EPA*, 920 F.3d 999, 1006 (5th Cir. 2019)). BPT limits are set based on the facilities representing "the average of the best" wastewater treatment in use by the industry. Statutory factors include consideration of total cost in relation to benefits; costs cannot be "wholly disproportionate" to benefits (*Chem. Mfrs. Assn. v EPA*, 870 F.2d 177, 205 (5th Cir. 1989)).

BAT represents the second level of control for toxic and non-conventional pollutants such as nitrogen and phosphorus. In setting BAT, EPA uses not the "average" plant, but rather the "single best performing plant" in the industry (*Chem. Mfrs. Assn. v. EPA*, 870 F. 2d at 226 (5th Cir. 1989)). Unlike BPT, the BAT factors omit a cost-benefit analysis, and replace it with a requirement to consider only the "cost of achieving such effluent reduction" *(Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1006 (5th Cir. 2019)). The CWA requires that BAT be "economically achievable," which has been interpreted to mean that the costs of controls can be "reasonably borne" by the industry (*Chem. Mfrs. Ass'n*, 870 F.2d at 262 (5th Cir. 1989); *BP Exploration & Oil*, 66 F.3d 784, 799-800 (6th Cir. 1996)). BCT represents the second level of

control for conventional pollutants such as oil & grease, BOD, TSS, fecal coliform, and pH. Statutory factors for BCT include a cost-reasonableness test.

Under the preferred Option 1, for direct dischargers, EPA proposes to revise BPT/BAT for nitrogen and phosphorus and BPT/BCT for fecal coliform. For indirect dischargers, EPA proposes to establish PSES and PSNS based on BPT/BCT for TSS, BOD, and oil & grease.

1. Direct Discharging Facilities (BAT)

For direct dischargers, EPA proposes BAT effluent limitations for nitrogen based on biological treatment to achieve full denitrification and BAT effluent limitations for phosphorus based on biological treatment with chemical precipitation with filtration. After considering the factors specified in CWA Section 304(b)(2)(B) (33 U.S.C. 1314(b)(2)(B)), EPA proposes to find that this technology is technologically available, economically achievable, and has acceptable non-water quality environmental impacts.

a) Availability of Nitrogen and Phosphorus Removal Technologies:

"In setting BAT, EPA uses not the average plant, but the optimally operating plant, the pilot plant which acts as a beacon to show what is possible" (*Kennecott v. EPA*, 780 F.2d 445, 448 (4th Cir. 1985), citing *A Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st Sess. (Comm. Print 1973), at 798)). BAT is supposed to reflect the highest performance in the industry and may reflect a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category, bench scale or pilot plant studies, or foreign plants (*Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1006; *Am. Paper Inst. v. Train*, 543 F.2d 328, 353 (D.C. Cir. 1976); *Am. Frozen Food Inst. v. Train*, 539 F.2d 107, 132 (D.C. Cir. 1976)). BAT may be based upon process changes or internal controls, even when these technologies are not common industry

practice *(Am. Frozen Foods*, 539 F.2d at 132, 140; *Reynolds Metals Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985); *California & Hawaiian Sugar Co. v. EPA*, 553 F.2d 280, 285-88 (2nd Cir. 1977)). As recently reiterated by the U.S. Court of Appeals for the Fifth Circuit, "Under our precedent, a technological process can be deemed available for BAT purposes even if it is not in use at all, or if it is used in unrelated industries. Such an outcome is consistent with Congress'[s] intent to push pollution control technology" (*Southwestern Elec. Power Co. v. EPA*, 920 F.3d at 1031, citation and internal quotations omitted). The technology bases for BAT are currently in use by MPP facilities across the sector. EPA has identified 14 facilities using enhanced nitrogen removal technologies and 22 using phosphorus removal technologies in both meat and poultry processing and rendering. These technologies are also widely used in municipal wastewater treatment in the U.S. and around the world. Accordingly, EPA proposes to find that such technologies are "available" within the meaning of the statute.

b) Economic Achievability of Nitrogen and Phosphorus Removal:

EPA proposes to find that the proposed BAT effluent limitations for total nitrogen and total phosphorus under the preferred Option 1 are economically achievable. Courts have interpreted economic achievability to mean that the cost of the regulations can be "reasonably borne" by the industry as a whole (*Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 262 (5th Cir. 1989); *BP Exploration & Oil v. EPA*, 66 F.3d 784, 799-800 (6th Cir. 1996); *see also Nat'l Wildlife Fed'n v. EPA*, 286 F.3d 554, 570 (D.C. Cir. 2002); *CPC Int'l Inc. v. Train*, 540 F.2d 1329, 1341-42 (8th Cir. 1976), *cert. denied,* 430 U.S. 966 (1977)). 'Congress clearly understood that achieving the CWA's goal of eliminating all discharges would cause "some disruption in our economy," including plant closures and job losses' (*Chem. Mfrs. Ass'n v. EPA*, 870 F.2d at 252,

citations omitted; *see also id*. at 252 n.337, reviewing cases in which courts have upheld EPA's regulations that projected up to 50 percent closure rates).

EPA assesses economic achievability using two primary approaches. The main approach is to use a discounted cash flow analysis to predict the number of possible closures resulting from implementation of the regulatory option. The closure analysis compares the future costs of compliance to the facility's estimated future earnings during the same period. For this analysis, EPA is considering a facility that shows positive future earnings without the rule and negative future earnings with the rule (regardless of magnitude of the earnings) to be a potential closure. EPA often also uses a simple financial screening analysis to compare facility compliance cost-to-revenue (CTR), in order to assess the relative magnitude of the economic impacts to each facility. The higher the ratio of cost to revenue, the greater the potential impact on the facility. Facilities experiencing significant economic impacts may, among other possibilities, reduce production levels, make changes to production and facility operations, forgo future expansion, or close. A cost-to-revenue analysis does not predict these responses but is a reasonable way to assess the likelihood of these types of impacts. On the other hand, some indirect facilities, depending on how their utility fees are structured, may incur lower payments to the receiving POTW due to lower pollutant loads being sent to the POTW.

EPA proposes to find that the preferred Option 1 is economically achievable in terms of affordability to the industry as a whole because results from both the BAT analysis of potential closures and the BAT CTR analysis show that potential closures and financial impacts are limited to a single facility that accounts for approximately one percent of discharging facilities and less than one percent (0.02 percent) of the total universe of MPP facilities. See Section VIII and the Cost and Economic Impact Screening Analyses and the Facility Closure Analysis

sections of the RIA for more detailed results. Additionally, EPA also performed a market analysis that estimates the proposed Option 1 would change market prices for major meat and poultry commodities by less than a tenth of a percent. See the Market Impact Analysis section of the RIA for more detailed results.

The annualized social cost of the preferred option is $232 million and $227 million using a three percent and seven percent discount rate respectively. The total cost of a rulemaking does not in and of itself inform the Agency about its impact to the industry as a whole without understanding the economic conditions of that industry. For example, an industry with total annual sales of only $20 to $30 billion might experience disruptions due to annual costs of this magnitude. However, the MPP industry, as classified under NAICS 3116, is a relatively large industry. The American Survey of Manufacturers estimates that total sales for the industry in 2021 were $267 billion.[12] Given the size of the MPP industry, EPA does not consider the total annual cost of the preferred Option 1 to be a determinative factor with respect to economic achievability.

c) Non-Water Quality Environmental Impacts of Nitrogen and Phosphorus Removal:

EPA proposes to find that the non-water quality environmental impacts of the preferred Option 1 (full denitrification, chemical phosphorus removal, and filtering) are acceptable. For further discussion of these impacts, see Section 0.

[12] U.S. Census Bureau. (2022). 2021 Annual Survey of Manufacturers: Summary Statistics for Industry Groups and Industries in the U.S.: 2018-2021.

EPA's preferred Option 1 for direct dischargers, which EPA estimates would require 125 of 171 total direct dischargers to install additional wastewater controls, would add an estimated additional 78,989 MWh of demand to the U.S. power grid. This would increase the total power demand of the U.S. by 0.0000019 percent, based on the U.S. generating 4,108 billion MWh in 2021 nationwide (EIA, 2021).[13] Preferred Option 1 for direct dischargers is also estimated to increase the US CO_2 emissions by 34,898 tons per year, or an 0.00058 percent increase of the nationwide total (*Climate Change Indicators: U.S. Greenhouse Gas Emissions*. USEPA. 2023).[14] In 2020, U.S. CO_2 greenhouse gas emissions totaled 5,981 million metric tons of CO_2 equivalents. EPA also estimates that an additional 286,685 tons of sludge will be generated under preferred Option 1. EPA proposes to find that the additional energy requirements, greenhouse gas emissions and sludge production are acceptable under the Act.

2. Indirect Discharging Facilities (PSES/ PSNS)

To control pollutants discharged by indirect discharging facilities, EPA establishes categorical pretreatment standards for existing sources (PSES) and for new sources (PSNS). Before establishing PSES/PSNS for a pollutant, EPA examines whether the pollutant "passes through" a POTW or interferes with the POTW operation or sludge disposal practices. In determining whether a pollutant passes through POTWs for these purposes, EPA typically compares the percentage of a pollutant removed by well-operated POTWs performing secondary treatment to the percentage removed by direct dischargers operating the BPT/BAT technology

[13] U.S. Energy Information Administration. 2021. *Electric Power Annual Report*. www.eia.gov/electricity/annual

[14] https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions

basis. A pollutant is determined to pass through POTWs when the average percentage removed nationwide by well-operated POTWs performing secondary treatment is less than the average percentage removed by direct dischargers operating the BPT/BAT technology basis. EPA establishes pretreatment standards for those pollutants regulated under BPT/BAT that pass through POTWs. In this way, the standards for indirect dischargers are equivalent to direct dischargers in that the treatment capability and performance of POTWs is recognized and taken into account in regulating the pollutants from indirect dischargers.

The *Meat and Poultry Products POTW Passthrough Analysis* (the Passthrough Analysis) indicates that oil & grease, BOD, TSS, TN and TP pass through POTWs (USEPA. 2023. DCN MP00309). EPA did not conduct its traditional passthrough analysis for the management of high chloride wastestreams that are being included for consideration as an additional regulated waste stream under all the proposed regulatory options. Rather, for chlorides, because the BAT technology for the proposed zero-discharge limitations and standards would achieve 100 percent removal of chlorides, and POTWs do not remove chlorides, the record supports a finding of passthrough absent this analysis.

a) BAT Rationale for PSES/PSNS for Nutrients:

After considering all the relevant statutory factors and wastewater technologies presented in this preamble and the TDD, EPA is not proposing to establish pretreatment standards (PSES/PSNS) for nitrogen and phosphorus removal for indirect dischargers under its preferred Option 1 for the reasons discussed in Section VII.E below. However, EPA is soliciting comment on the other proposed regulatory options (Options 2 and 3) and any other regulatory options that would include such pretreatment standards for nutrients (See Section VII.D below).

b) BPT/BCT Rationale for PSES/PSNS for Conventional Pollutants:

Under preferred Option 1, EPA proposes to establish PSES based on the BPT level of control for conventional pollutants (BOD, TSS, oil & grease) based on screening and DAF technologies. After considering all the relevant factors and wastewater technologies presented in this preamble and in the TDD, EPA proposes to find that this technology is available, imposes costs that are not wholly disproportionate to effluent reduction benefits, and has acceptable non-water quality environmental impacts.

c) Technological Availability:

Courts have interpreted BPT to represent the "average of the best" performance (*EPA v. National Crushed Stone Assn*., 449 U.S. 64, 76 (1977). *See also*, *Kennecott Copper v. EPA*, 612 F.2d 1232, 1238 (10th Cir. 1979); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1059, 1062 (D.C. Cir. 1978); *American Petroleum Institute v. EPA*, 540 F.2d 1023, 1034 (10th Cir. 1976); *American Frozen Food Institute v. Train*, 539 F.2d 107, 117, 119 (D.C. Cir.1976); *American Meat Inst. v. EPA*, 526 F.2d 442, 462 (7th Cir. 1975); cert. denied, 430 U.S. 922 (1977); *Tanners' Council of America, Inc. v. Train*, 540 F.2d 1188, 1191 (4th Cir.1976)). The technologies forming the bases for the proposed BPT revisions represent the average of the best performance as they are in use by MPP facilities across the subcategories. EPA has identified 21 indirect discharging facilities using screening and DAF technologies in both meat and poultry processing and rendering. In addition, these technologies are widely used at direct discharging facilities. Most facilities use some type of oil & grease removal technology, and DAF is the most commonly used by MPP facilities. Furthermore, these technologies are widely used by a variety of industrial classes and in municipal wastewater treatment for the control of conventional pollutants. See the TDD for additional discussion of DAF. DAF technologies have a small footprint, and EPA has no data indicating that the facilities that would be subject to pretreatment

standards for conventional pollutants under the preferred Option 1 would not be able to implement DAF technologies at existing and new facilities.

d) Costs of Conventional Pollutants Removal (BPT/BCT):

Caselaw and the CWA's legislative history indicate that to revise BPT, EPA is to employ a limited cost-benefit balancing test, applying controls unless the costs are wholly disproportionate to the effluent reduction benefits (*Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 204, 205 (5th Cir. 1989); *Kennecott Copper v. EPA*, 612 F.2d 1232, 1238 (10th Cir. 1979); *American Meat Inst. v. EPA*, 526 F.2d 442, 453 (7th Cir. 1975); cert. denied, 430 U.S. 922 (1977); *America Frozen Food v. Train*, 539 F.2d 107, 117, 119 (D.C. Cir. 1976). *See also*, *A Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong. 1st Sess. at 169-170 (Comm. Print 1973)). EPA's analysis shows that the effluent reduction benefits are not wholly disproportionate to the costs of conventional pollutant removal technologies under the preferred Option 1 (see Section VIII.A for additional details). The costs are $32.84 million, and the effluent reduction is 234 million pounds per year of pollutants removed. Additionally, upgrading from the candidate BPT to BCT candidate technology (which is screening/grit removal, DAF, anaerobic lagoon, and biological treatment) did not pass the BCT cost test, and thus, EPA is proposing to set BCT as equal to BPT (see Section VIII B.).

e) Non-Water-Quality Environmental Impacts (BPT/BCT):

The record supports that removal of conventional pollutants under the preferred Option 1 would have acceptable non-water quality environmental impacts, including energy requirements (see Section X of this preamble).

EPA's preferred Option 1 includes removal of the conventional pollutants BOD, oil & grease, and TSS from the meat and poultry facility's discharge before sending it to the POTW

for further treatment. Under Option 1, 719 out of 3,708 indirect discharging facilities would incur an estimated 1,699 MWh of energy demand. Although most of this energy demand would be a shift from the POTW to the MPP facility, some portion of this could result in an additional energy demand to the U.S. power grid. This total power demand under preferred Option 1 is 0.000000041 percent of the US power generation (based on 4,108 billion MWh in 2021 nationwide), which EPA proposes to find is acceptable (EIA, 2021).[15] EPA also proposes to find that the additional GHG increases would be acceptable. Preferred Option 1 for indirect dischargers is estimated to increase the U.S. CO_2 emissions by 753 tons per year, or an 0.000013 percent increase of the nationwide total (based on U.S. CO_2 greenhouse gas emissions of 5,981 million metric tons of CO_2 equivalents in 2020) (*Climate Change Indicators: U.S. Greenhouse Gas Emissions.* USEPA. 2023). Similarly preferred Option 1 for indirect dischargers would increase the sludge production by an estimated 11,961 tons of sludge per year, across 719 indirectly discharging facilities, which EPA also proposes to find to be acceptable.

D. Rationale for Other Regulatory Options Proposed (Options 2 and 3)

EPA also evaluated the applicability of the statutory factors with respect to the other regulatory options proposed (Options 2 and 3), although EPA is not proposing these as the preferred option for the reasons discussed in Section VII.E below. With respect to technological availability, the technologies assessed for Options 2 and 3 are widely used in municipal wastewater treatment in the U.S. and around the world. The record supports that such technologies are available in that they effectively remove the pollutants addressed in this

[15] U.S. Energy Information Administration. 2021. *Electric Power Annual Report*. www.eia.gov/electricity/annual

rulemaking. However, there may be constraints on availability of nutrient removal technologies with respect to indirect dischargers (as discussed in Section VII.E below), and EPA solicits information about such potential constraints. With respect to the statutory cost tests for BPT, BCT and BAT for Options 2 and 3, see Section VIII below. EPA's comparison of costs to benefits of the proposed BPT/BCT limitations under those options would historically support a finding that the costs are not "wholly disproportionate" to the benefits. Similarly, the possible facility closures and cost to revenue ratio of the proposed BAT limitations are within the range of impacts that EPA has historically considered to be economically achievable, as required by CWA 301(b)(2)(A) (33 U.S.C. 1311(b)(2)(A)). EPA reasonably considered impacts on small businesses in setting production thresholds for applicability based on avoiding cost to revenue ratios indicating likelihood of economic impacts, as identified in the Regulatory Flexibility Analysis guidance *(*CWA Section 304(b)(2)(B), authorizing consideration of "such other factors as the Administrator deems appropriate" in establishing BAT). With respect to non-water quality environmental impacts of the BPT/BCT and BAT technologies under Options 2 and 3, see Section X below. EPA solicits comment on whether these proposed options – or other regulatory options based on different production thresholds or technologies – would meet the applicable statutory factors and should form the basis of any final rule.

E. Rationale for Rejecting Options 2 and 3 as the Preferred Option

As discussed above, EPA considered two proposed options (Options 2 and 3) that would be more expansive than Option 1. EPA did not select these as the preferred option due to several potential concerns. First, EPA is concerned that the more expansive options may impede the Biden Administration's initiatives to expand independent meat and poultry processing capacity and enhance the resilience of the food supply chain, as reflected in Executive Order (E.O.) 14036

(July 9, 2021). This is a crucial Administration priority to protect against the type of supply chain disruptions that arose during the COVID 19 pandemic. In issuing the E.O., the Administration explained that without such diversification, "our food supply chains are susceptible to shocks," and that "[w]hen COVID-19 or other disasters such as fires or cyberattacks shutter a plant, many ranchers have no other place to take their animals" See *Fact Sheet: The Biden-Harris Action Plan for a Fairer, More Competitive, and More Resilient Meat and Poultry Supply Chain* (The White House. 2022) (noting that "our overreliance on just a handful of giant processors leaves us all vulnerable, with any disruptions at these bottlenecks rippling throughout our food system.").[16]

Relative to many other industries regulated by ELGs, the MPP industry plays a critical role in the nation's food supply chain. The supply chain disruptions during the COVID-19 pandemic highlighted the problems with the consolidation of the industry over the last 50 years and how susceptible it is to shocks. The pandemic disrupted both the market supply and demand patterns typically observed. As the demand for meat and poultry from restaurants declined dramatically in response to the public lock down efforts, the demand for meat from grocery stores and on-line sources rose.[17] At the same time, COVID began to spread rapidly through meat and poultry processing facilities. This resulted in a significant short-run disruption to supply as facilities temporarily closed and many more reduced line speeds due to both worker

[16] https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/fact-sheet-the-biden-harris-action-plan-for-a-fairer-more-competitive-and-more-resilient-meat-and-poultry-supply-chain/

[17] Hobbs J. E. (2021). The Covid-19 pandemic and meat supply chains. Meat science, 181, 108459. https://doi.org/10.1016/j.meatsci.2021.108459.

shortages and safety concerns.[18] These combined changes to demand and supply led to shortages and higher prices for many meat and poultry commodities (The White House. 2022).

EPA's analysis showed Options 2 and 3 have more potential facility closures than Option 1 due to the requirements imposed on additional facilities, thus potentially harming the Administration's priority to expand and diversify the meat and poultry processing industry. For this reason, EPA is selecting Option 1 as the preferred proposed option at this time, rather than more expansive options, as it would allow the Agency to achieve significant reductions in nutrients and conventional pollutants in a way that avoids potential supply chain disruptions in the nation's food supply, consistent with the policy direction in the E.O. While EPA's analysis shows Option 1 may result in 16 possible facility closures, this represents 0.03 percent of total industry facilities, and thus, any supply chain disruptions from such possible closures would be minimal, temporary and localized. In addition, the forecasted change in industry production levels due to the preferred Option 1 is estimated to be only 0.01 percent. By comparison, EPA's analysis shows that potential facility closures would be 22 under Option 2 and 53 under Option 3, supporting EPA's selection of Option 1 as the preferred proposed option. See the Other Economic Factors Section of the RIA for a more in-depth discussion of this issue.

The CWA gives EPA authority to consider these policy concerns in determining BAT (CWA Section 304(b)(2)(B) (authorizing consideration of "such other factors as the Administrator deems appropriate" in assessing BAT); *Weyerhaeuser v. Costle*, 590 F.2d 1011,

[18] Whitehead, D., & Brad Kim, Y. H. (2022). The Impact of COVID 19 on the Meat Supply Chain in the USA: A Review. Food science of animal resources, 42(5), 762–774. https://doi.org/10.5851/kosfa.2022.e39.

1045 (D.C. Cir. 1978) (Congress intended that EPA have discretion "to decide how to account for the consideration factors, and how much weight to give each factor.")).

At the same time, EPA intends to consider any impact of federal financial assistance on wastewater treatment upgrades at these facilities. EPA seeks comment on whether other federal funds or other programs could reduce or minimize potential impacts of the more expansive options on the Administration's efforts to support the meat and poultry supply chain.

EPA has also heard from small entity representatives (SERs) during EPA's SBREFA panel process (*Final Panel Report of the Small Business Advocacy Review Panel on EPA's Planned Proposed Meat and Poultry Products Effluent Limitations Guidelines Rulemaking.* USEPA. 2023. DCN MP00347) that there are potential concerns about the availability of nitrogen removal technologies under Options 2 and 3, due to space limitations for such technologies at some facilities. Although these technologies are currently in use in the industry, these technologies require a greater land area than DAF (the conventional pollutant control technology that is the basis for the limits on indirect dischargers under Option 1), particularly at facilities with high wastewater flows. EPA has heard concerns from SERs with respect to facilities located in or near urbanized areas where sufficient space may not be available to install certain components of nitrification/denitrification technology, such as aerobic and anaerobic lagoons. Industry stakeholders have also indicated that zoning restrictions may prevent them from acquiring adjacent parcels of land that may be needed for installation of such technology. EPA estimates that 143 indirect discharging facilities would incur costs to comply with nitrogen and phosphorus effluent limits under Option 2 and 777 such facilities would incur costs to comply with limits under Option 3, many of which would need to install nitrogen control technologies for the first time. EPA would like additional information about available space at

such facilities, as well as information on other high rate/small footprint nutrient removal technologies that might be available to treat MPP wastewater.

EPA also heard from SERs concern about the availability of nutrient control technologies for indirect dischargers under Options 2 and 3 due to ongoing supply chain issues and labor shortages in the wastewater treatment industry. While these technologies are widely available and have been used in many industrial and municipal wastewater treatment facilities across the country to remove nutrients, SERs have raised concerns about the timing of such availability. The amount of a good supplied for a market can take time to adjust to a sudden large increase in demand. In addition, if there is a temporary spike in demand resulting from many facilities needing to come into compliance at the same time, there may not be an incentive for the companies that make and install these technologies to increase their long-term capacity. Given the large number of indirect facilities that would need to install new nutrient removing treatment technologies under Options 2 and 3, there is a potential for implementation delays. These implementation delays could result in facilities operating out of compliance or temporarily closing until they are able to get the new control technology in place. See the Other Economic Factors Section of the RIA for a more in-depth discussion of this issue.

Given the large number of indirect discharging facilities that would likely need to install nutrient removal technologies under Options 2 and 3, and the ongoing supply chain issues, it is not clear whether these technologies will be available in sufficient quantity to allow for installation within the three-year statutory timeframe for pretreatment standards under CWA Section 307(b) (33 U.S.C 1317(b)). EPA solicits additional information about production capacity for nutrient control technologies in the industry, given that the Nation is currently in the

process of significant investments in water infrastructure as part of the Bipartisan Infrastructure Law.

In addition, EPA is considering whether there are compliance flexibilities for indirect discharging facilities that would allow for additional time beyond the three-year statutory timeframe in CWA Section 307(b) (33 U.S.C. 1317(b)), in light of potential concerns about availability of technology due to supply chain issues. EPA solicits comment on how it could implement new pretreatment standards consistent with this provision recognizing that there could be supply chain issues preventing facilities from installing the treatment technologies. For example, one option could be to allow phased implementation based on size thresholds, whereby larger facilities would be required to install such technologies within three years of the effective date of the rule, while smaller facilities would be allowed additional time to install such technologies, based on a demonstration that the facility is contractually bound to procure the technology within a specified time of the effective date. EPA solicits comment on such an approach, or other implementation flexibilities for indirect discharging facilities, should the Agency decide to finalize a rule based on a more expansive option than the preferred Option 1.

Should the Agency decide to promulgate a rule based on a more expansive option, EPA is considering conditional limits under these options (see Section VII.F) to reduce costs and eliminate the need for redundant treatment. To better understand the potential use of such conditional limits, EPA solicits information about how many POTWs that receive MPP wastewater have nitrogen and phosphorus removal technologies that could provide an equivalent level of treatment. and whether such flexibilities may result in significant cost savings, including any relevant data on incremental cost savings or other benefits.

EPA has also heard from industry representatives that since nitrification/denitrification technologies also remove organic pollutants (as measured by BOD_5), there is some concern about the ability of POTWs to meet their discharge limitations should indirect discharging MPP facilities be required to meet nitrogen pretreatment standards. The secondary treatment regulations at 40 CFR 133.102 require POTWs to achieve a 30-day average percent removal of BOD and TSS of not less than 85 percent. If MPP facilities currently discharge a significant quantity of organic pollutants to a POTW, that load would be reduced after meeting any nitrogen pretreatment standards. That may therefore reduce the percent reduction in BOD achieved at the POTW since the POTW would be receiving more dilute flows. While EPA notes that the secondary treatment regulations at 133.103(d) allow for consideration of less concentrated influent wastewater and the substitution of a lower percent removal requirement or a mass loading limit for the percent removal requirement by the Regional Administrator or State Director, which could address this issue, EPA solicits additional comments on this concern from the POTW community.

F. Additional Provisions

In addition to seeking comment on the three proposed regulatory options, EPA solicits public comment on three additional provisions that would apply with respect to some of these options: First, with respect to the pretreatment standards for nitrogen and phosphorus that would apply to indirect dischargers under Options 2 and 3, EPA solicits comment on a provision that would allow an exemption from these limits for indirect discharging MPP facilities discharging to POTWs that provide equivalent nutrient removal as would be required under the proposed PSES/PSNS. Such "conditional limits" have been used in previous ELGs, such as the Iron and Steel Manufacturing Effluent Guidelines (40 CFR Part 420.15). EPA is considering including

such a provision in any final rule that would contain nutrient pretreatment standards (such as under Options 2 or 3) because nitrogen and phosphorus removal technologies involve more costly, advanced treatment than is required for conventional pollutants and some facilities have already shared costs to upgrade their receiving POTW to remove nutrients to meet Water Quality Based Effluent Limits in the POTW's discharge permits. If the receiving POTW is providing equivalent nutrient removal, then the MPP facilities may not need to pretreat their wastewater to remove nutrients to achieve an equivalent environmental outcome. Conditional provisions that allow this flexibility, provided the POTW agrees, would reduce costs for indirect dischargers where the POTW already has nutrient removal technologies and eliminate redundant treatment. For conditional limits applied to a MPP facility, EPA solicits comment on how to structure such a provision to include factors such as what treatment at the POTW could be considered equivalent, whether the POTW permit should contain nitrogen and phosphorus effluent limits at least as stringent as the pretreatment standards that would be required at the MPP facility, how to demonstrate compliance, how to ensure that the POTW has the capacity and ability to adequately treat such wastewaters while maintaining its design pollutant capacity reserved for the residential population, and the process by which the facility would request the conditional limits be applied and receive approval from their control authority.

Second, EPA solicits comment on including *E. coli* as a regulated parameter for direct dischargers because the presence of *E. coli* is a more reliable indicator of pathogen pollution than the presence of fecal coliforms. *E. coli*, a predominate member of normal gut microflora in warm blooded animals, has a limited capacity for reproduction outside of the intestinal tract, making its presence in environmental samples a strong indicator of fecal contamination (Odonkor and

Ampofo. 2013).[19] Fecal coliforms, a large group of thermotolerant bacteria, include some bacterial species of environmental origin and therefore can result in false positives for fecal contamination (Doyle and Erickson. 2006).[20] EPA updated its recreational water quality standards in 2012 (USEPA. 2012. EPA-820-F-12-058) and the Revised Total Coliform Rule in 2013 (USEPA. 2013. EPA 815-B-13-001) to reflect the current state of knowledge for indicator bacteria. Given these updates in the use of bacterial indicators for water quality, and that current disinfection technology can consistently reduce the presence of these indicator bacteria below the current MPP ELGs, EPA is soliciting comment on more stringent fecal coliform limits for direct dischargers based on BCT/BPT as well as limits for *E. coli* for direct dischargers based on BAT as part of the preferred option in this proposed rule. EPA also solicits comment on replacing fecal coliform limits with *E. coli* limits in any final rule to reduce redundancy in monitoring and limit requirements.

Third, EPA solicits comment on including BAT/NSPS/PSES/PSNS chloride limits for certain wastestreams to remove salts from facility discharges in any final rule based on BAT. In the meat processing industry, salts may be used in further processing and for water softening purposes. The presence of chlorides in discharges to surface waters can adversely affect aquatic organisms because of their sensitivity to concentrations of salt. A review of chlorides data in 2021 discharge monitoring reports from ICIS-NPDES showed about 70 percent of MPP facilities are discharging wastewater with chloride concentrations exceeding ambient water quality criteria

[19] Odonkor, S.T.; Ampofo, J.K. 2013. *Escherichia coli as an indicator of bacteriological quality of water: An overview.* Microbiology Research, 4(1), e2. https://doi.org/10.4081/mr.2013.e2
[20] Doyle, M.P.; Erickson, M.C. 2006. *Closing the door on the fecal coliform assay*. Microbe. 1, 162–163.

of 230 mg/L and secondary drinking water standards of 250 mg/L (the reported 70th percentile of these data was 254 mg/L). Although removing salt is difficult and can be expensive, and therefore treating the whole wastewater effluent may not be the most efficient way to control chlorides, some facilities have certain operations with process wastewater that is kept separate from the main waste stream. These processes include hide processing, water softening regeneration wastewater, meat and poultry koshering, and further processing operations involving marinating and curing. Segregation and treatment of these process wastestreams is currently in place at some MPP facilities. Segregation and management of these high chloride wastestreams could result in targeted reductions of up to 477 million pounds of salt discharges annually at a cost of $172 million annually if applied to 466 facilities under Options 1, 2 and 3.

EPA is considering salt recycle/evaporation systems as the technology basis for establishing BAT/NSPS/PSES/PSNS limitations to control chlorides discharged in high chlorides waste streams in any final rule. EPA is considering effluent limitations for chlorides for direct and indirect discharging facilities in any subcategory with production greater than 5 million pounds per year with high chlorides processes. Analysis indicates that these technologies may be available, economically achievable, and have acceptable non-water quality environmental impacts. See Section 12 of the TDD for additional details on the non-water quality environmental impacts of this provision. EPA is not including this provision as part of the preferred option in today's proposal, but rather is soliciting comment on including such a provision in any final rule. In particular, EPA solicits comment on the potential costs of such a provision, and specifically on the cost methodology and results contained in the TDD.

G. Small Business Considerations from the Small Business Advocacy Review Panel

Although this proposed rule would not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this proposed rule on small entities and completed the Small Business Advocacy Review (SBAR) panel to take input from small entities. EPA's proposed preferred option would not expand applicability to smaller direct discharging facilities, but it would propose first-ever national pretreatment standards for indirect discharging facilities. EPA's analysis (see Section VIII) shows that Option 1 would apply to 96 small firms. This section discusses the 5 recommendations from the SBAR panel.

EPA recognizes that under all options considered some facilities will be subject to pretreatment standards and/or categorical discharge standards for the first time, and therefore, may not be familiar with certain aspects of NPDES permitting and/or pretreatment standards. EPA also heard concerns during the SBAR panel outreach meetings with SERs specifically related to a lack of familiarity with effluent guidelines and pretreatment standards. One of the five recommendations was for EPA therefore to solicit comments on what information small facilities would find beneficial (*e.g.,* terms to know for determining applicability and compliance, information from the POTW or control authority, information on the general permitting process, wastewater operator requirements, and how to measure annual production) that could be addressed through guidance or other materials that EPA could provide should any final rule expand applicability to small firms beyond the current rule. EPA therefore solicits comment from small entities on this topic.

EPA also heard from SERs about concerns related to production thresholds for applicability of the ELGs. While EPA's proposed regulatory options minimize impacts on small

entities, another recommendation that EPA also solicits comment on is whether the proposed production thresholds could be adjusted to further minimize such impacts, particularly with respect to Options 2 and 3 as those options expand coverage to additional facilities as compared to Option 1. A third recommendation that EPA also solicits comment on is for alternatives to production thresholds for determining regulation, such as water usage, specifically as a way to minimize impacts to small firms or to provide an alternative means of determining applicability to small firms that may not track production.

Under Options 2 and 3, EPA is considering conditional limits for facilities that discharge to POTWs with nitrogen and phosphorus limits and treatment capabilities equivalent to the treatment that would be needed to comply with any new proposed requirements. For these indirect discharging facilities, with documentation and approval by the POTW/control authority, the MPP facilities would not need to treat the wastewater for nitrogen and phosphorus before discharging to the POTW. A fourth Panel recommendation that EPA also requests comment on is the inclusion of conditional limits, and specifically what documentation and approval by the POTW/control authority would be sufficient to establish conditional limits as a compliance mechanism.

The fifth recommendation was for EPA to consider and take comment on a longer or flexible timeline for small entities to meet proposed regulations. EPA requests comment from small entities on what kind of timeline flexibilities would be helpful. See the SBREFA panel report for additional details regarding these and other considerations that were raised by SERs (USEPA. 2023. DCN MP00347).

VIII. Costs, BPT Wholly Disproportionate Cost Test, Economic Achievability, and Other

Economic Impacts

This section provides an overview of the methodology EPA used to assess the costs and the economic impacts of the three options considered in the proposed rule and summarizes the results of these analyses. EPA separately assessed the cost and economic impacts of the BPT, BCT, and BAT requirements for each regulatory option proposed. Then EPA assessed the combined economic effects of all BPT, BCT, and BAT requirements for each option for purposes of implementing the Regulatory Impact Analysis required by E.O. See the RIA and supporting information in the docket for additional detail. The proposed rule would revise BPT for conventional pollutants and consider whether more stringent BCT limits pass the two-part BCT cost test (51 FR 24974 (July 9,1986)). For BPT, EPA performed a "wholly disproportionate" cost test for all direct and indirect discharging facilities that would be required to control conventional pollutants under the three proposed options. For BCT, EPA evaluated the reasonableness of BCT candidate technologies—those that remove more conventional pollutants than BPT—by applying a two-part cost test. The two-part "cost reasonableness" test requires: (1) the cost per pound of conventional pollutant removed by dischargers in upgrading from BPT limits to the candidate BCT option must be less than the cost per pound of conventional pollutant removal by upgrading POTWs from secondary treatment to advanced secondary treatment ("the POTW test"); and (2) an assessment of industry costs per pound removed in upgrading from BPT to BCT relative to the costs per pound removed in going from no treatment to BPT, followed by a comparison of that ratio to the analogous ratio for POTWs ("the industry cost effectiveness test"). The industry ratio must be less than the POTW ratio to pass the test.

The proposed rule would also revise BAT for non-conventional pollutants (nitrogen and phosphorus). EPA assessed the economic achievability of BAT for all direct and indirect

facilities that would have requirements for non-conventional pollutants under the proposed options. In developing ELGs reflecting BAT, and as required by CWA Section 301(b)(2)(A) (33 U.S.C. 1311(b)(2)(A)), EPA evaluates the economic achievability of the regulatory options to assess the impacts of applying the limitations and standards to the industry as a whole, which typically includes an assessment of incremental facility closures attributable to a regulatory option. As described in more detail below, this proposed ELG is expected to result in incremental costs when compared to baseline operations for many facilities. The cost and economic impact analysis for this proposed rulemaking focuses on understanding the magnitude and distribution of compliance costs across the industry and the broader market impacts. EPA used indicators to assess the impacts of the three regulatory options on the MPP industry. EPA considered the total cost to industry and change in the number and capacity of specific facilities expected to close under the proposed option, as well as the other options considered, compared to baseline. EPA also analyzed the ratio of compliance costs to revenue to see how the three options would change the number of plants and their owning entities that exceed thresholds indicating potential financial strain. In addition to the analyses supporting the economic achievability of the regulatory options, EPA conducted other analyses to (1) characterize other potential impacts of the regulatory options (*e.g.*, on market prices) and (2) to meet the requirements of E.O.s or other statutes (*e.g.*, E.O. 12866, Regulatory Flexibility Act, Unfunded Mandates Reform Act).

A. BPT Wholly Disproportionate Cost Test

EPA estimated facility-specific costs and loads for two levels of treatment technology reflected in the regulatory options developed. The first level of treatment was the use of DAF technology. This level of technology is already in place for direct discharging facilities reflecting

the existing rule BPT, BCT and BAT requirements but would be a new requirement for indirect discharging facilities. The CWA requires that the EPA consider "the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application," and these costs should not be wholly disproportionate to the corresponding effluent reduction benefits. As the U.S. Court of Appeals for the Fifth Circuit stated, "The courts of appeal have consistently held that Congress intended Section 304(b) to give the EPA broad discretion in considering the cost of pollution abatement in relation to its benefits and to preclude the EPA from giving the cost of compliance primary importance" (*Chemical Manufacturers Assn. v. U.S. EPA*, 870 F.2d 177, 204, (5th Cir. 1989)).

Table VIII-1 presents the annualized after-tax technology costs and associated pollutant load reductions for individual subcategories of facilities and the industry as a whole. Although BPT applies to both conventional and nonconventional pollutants, DAF technology is primarily employed to address conventional pollutants, so only conventional pollutant reductions are shown. Load reductions reflect the change in pollutants being discharged from regulated facilities to their receiving POTWs. The table demonstrates that under BPT, there would be significant reductions in conventional pollutant loading for each subcategory and the industry as a whole, across all three options. Based on these results, EPA proposes to find that BPT costs for conventional pollutant reductions under the preferred Option 1 are not wholly disproportionate to the corresponding effluent reduction benefits. EPA also solicits comment on whether the BPT costs of conventional pollutant reductions under regulatory Options 2 and 3, as reflected in the table below, are also not wholly disproportionate to the effluent reduction benefits.

Table 0-1

Rule Option	Sub-categories	Total Annualized BPT Costs[21] (millions of $2022)	Oil & Grease	BOD	TSS	Total Pollutants	Oil & Grease	BOD	TSS	Total Pollutants
			BPT Reductions (M lbs/yr)				BPT Ratio lbs/$			
Option 1	A-D	$2.00	3	7	3	13	$0.63	$0.31	$0.65	$0.16
	F-I	$2.46	6	0	0	6	$0.43	$18.15	$36.31	$0.41
	J	$0.74	0	2	1	3	$2.91	$0.42	$0.83	$0.26
	K	$7.08	3	61	100	164	$2.65	$0.12	$0.07	$0.04
	L	$1.66	0	8	13	22	$4.60	$0.20	$0.12	$0.08
	All	**$13.93**	**12**	**77**	**118**	**207**	**$1.14**	**$0.18**	**$0.12**	**$0.07**
Option 2	A-D	$2.00	3	7	3	13	$0.63	$0.31	$0.65	$0.16
	F-I	$2.46	6	0	0	6	$0.43	$18.15	$36.31	$0.41
	J	$0.74	0	2	1	3	$2.91	$0.42	$0.83	$0.26
	K	$7.08	3	61	100	164	$2.65	$0.12	$0.07	$0.04
	L	$1.66	0	8	13	22	$4.60	$0.20	$0.12	$0.08
	All	**$13.93**	**12**	**77**	**118**	**207**	**$1.14**	**$0.18**	**$0.12**	**$0.07**
Option 3	A-D	$15.76	7	14	7	28	$2.25	$1.10	$2.32	$0.56
	F-I	$6.89	11	0	0	11	$0.64	$27.30	$54.60	$0.62
	J	$0.79	0	2	1	3	$3.10	$0.45	$0.88	$0.27
	K	$7.75	3	63	104	170	$2.78	$0.12	$0.07	$0.05
	L	$1.66	0	8	13	22	$4.60	$0.20	$0.12	$0.08
	All	**$32.84**	**21**	**88**	**126**	**234**	**$1.55**	**$0.37**	**$0.26**	**$0.14**

B. BCT Cost Test

In July 1986, EPA explained how it developed its methodology for setting effluent limitations based on BCT (51 FR 24974). EPA evaluates the reasonableness of BCT candidate technologies—those that remove more conventional pollutants than BPT—by applying a two-part cost test: a POTW test and an industry cost-effectiveness test.

[21] All BPT and BAT costs were annualized using the weighted average cost of capital (WACC) for facilities. The WACC was derived based on facility responses to Industry Survey. See Section 5.2.3 of the Regulatory Impact Analysis for a detailed explanation of how the WACC was derived.

EPA first calculates the cost per pound of conventional pollutant removed by industrial dischargers in upgrading from BPT to a BCT candidate technology, and then compares this cost to the cost per pound of conventional pollutants removed in upgrading POTWs to advanced secondary treatment (i.e., "the POTW test"). The upgrade cost to industry must be less than the POTW benchmark of $0.25 per pound (in 1976 dollars) or $1.48 per pound (in 2022 dollars). In the industry cost-effectiveness test, the ratio of the cost per pound to go from BPT to BCT divided by the cost per pound to go from raw wastewater to BPT for the industry must be less than 1.29 (that is, the cost increase must be less than 29 percent).

For purposes of this analysis, for the preferred Option 1, EPA compared the cost of upgrading from the candidate BPT (based on screens followed with DAF technology for 720 large indirect facilities) to BCT (based on biological treatment to achieve full denitrification and chemical precipitation with filtration as described for BAT in Section VII C.1). The cost for these 719 facilities to upgrade from candidate BPT to candidate BCT would range from $0.26 to $1.32 per pound of pollutant removed depending on the subcategory. Option 2 involves the same 719 facilities receiving conventional pollutant removal technology; thus, the cost and results of this test would be the same as Option 1. Option 3 would require 1,485 indirect facilities to implement conventional pollutant removal technology, and the cost for these facilities to upgrade from candidate BPT to candidate BCT would range from $0.30 to $1.03 per pound of pollutant removed depending on the subcategory. The Section 9 of the TDD provides more details on the calculations of the BCT cost tests.

In developing BCT limits, EPA considered whether there are technologies that achieve greater removals of conventional pollutants than the candidate for BPT, and whether those

technologies are cost-reasonable according to the prescribed BCT tests. For Subcategories A through D, F through J, K, and L, EPA identified technologies that can achieve greater removals of conventional pollutants than the candidate BPT standards; however, this technology is full treatment (based on screening/grit removal, DAF, anaerobic lagoon, biological treatment, chemical phosphorus removal, sand filter, and solids handling), and EPA proposes to find that it does not pass the BCT cost test under any of the proposed options. Furthermore, since these limits are for indirect dischargers that send their wastewater to POTWs, and POTWs are designed to remove BOD, TSS, and oil & grease, EPA considers screens with DAF treatment an appropriate pretreatment technology for PSES/PSNS. Accordingly, EPA proposes to establish BCT effluent limitations equal to the candidate BPT limitations based on screens followed with DAF for indirect dischargers in these subcategories.

C. Economic Achievability Analysis for BAT

For the second level of treatment for toxic and non-conventional pollutants, direct dischargers must meet BAT, and indirect dischargers must meet pretreatment standards based on BAT. In setting BAT, EPA is required to evaluate costs and determine if they can be reasonably borne by the industry. EPA considers not only technology cost but also engineering and process changes as well as energy requirements of implementing the new technology. The cost estimates developed by EPA for the technologies considered for BPT, BCT, and BAT incorporate these factors as additional cost elements.

1. Facility Closure Analysis (BAT)

Estimates of possible facility closures are the traditional way EPA considers economic achievability. A discounted cash-flow analysis was performed on detailed questionnaire respondents and the results were then extrapolated to all facilities incurring costs under each

option. For more information on this approach, see the RIA. Table VIII-2 shows the number of facilities with BAT costs and the estimated possible closures by production subcategory for each option. The table also shows the relative percentage of facilities with costs and total discharging facilities that are estimated to close. EPA estimated that the preferred Option 1would have only a single possible closure and proposes to find that this would be considered economically achievable under any reasonable measure of impacts. Under Options 2 and 3 EPA estimated that there are 19 and 29 total possible closures, respectively. This equates to 7 percent of the 269 facilities with BAT costs under Option 2, and 3 percent of the 913 facilities with BAT costs under Option 3. However, to understand the economic impact of these options on the industry it is necessary to consider these possible closures within the context of the total number of industry facilities. Neither Options 2 nor 3 have estimated potential closures that exceed 1 percent of the 3,897 discharging facilities. If the zero discharge facilities were also factored in, these percentages would be smaller still. These two options were developed to limit BAT requirements to just the larger discharging facilities that tend to be better able to afford the nutrient reduction technologies. EPA solicits comment on whether Options 2 and 3 would be economically achievable for the industry as a whole, based on the level of possible facility closures reflected in the table below.

Table 0-2. Possible Facility Closures Due to BAT Costs by Regulatory Option

Rule Option		Production Sub-categories					
		Meat First	Meat Further	Poultry First	Poultry Further	Rendering	**Total Facilities**
1	Facilities with BAT Costs	30	9	64	5	18	126
	Estimated Possible Closures	0	0	1	0	0	1
	% of facilities with costs	0.0%	0.0%	1.6%	0.0%	0.0%	0.8%

	% of all Discharging facilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	Facilities with BAT Costs	85	9	142	5	28	269
	Estimated Possible Closures	10	0	8	0	1	19
	% of facilities with costs	11.8%	0.0%	5.6%	0.0%	3.6%	7.1%
	% of all Discharging facilities	0.3%	0.0%	0.2%	0.0%	0.0%	0.5%
3	Facilities with BAT Costs	137	371	190	100	115	913
	Estimated Possible Closures	11	3	11	1	3	29
	% of facilities with costs	8.0%	0.8%	5.8%	1.0%	2.6%	3.2%
	% of all Discharging facilities	0.3%	0.1%	0.3%	0.0%	0.1%	0.7%

To assess the economic achievability of BAT technologies, EPA also compared facility level costs to estimated revenue to screen for potential financial impacts to facilities. EPA considered total facility costs relative to industry sales, the number of facilities that have costs greater than 1 percent and 3 percent of revenue, and the number of potential facility closures. The next level of control beyond BPT is not feasible for facilities unless the BPT technology is in place, so EPA conservatively assessed both the costs of BAT assuming BPT is in place, called "incremental," and the costs including both costs to meet revised BPT and the revised BAT, called "additive" costs of BAT technologies. Table VIII-3 shows the incremental and additive BAT costs for each of the three options and the percentage of annual industry sales these costs comprise.

Table 0-3. Total Annualized After-Tax Compliance Costs for BAT

	Incremental BAT	**BPT + BAT (Additive)**

Regulatory Option	(millions, 2022$)	% Industry Annual Sales*	(millions, 2022$)	% Industry Annual Sales*
Option 1	$196.39	0.07%	$196.39	0.07%
Option 2	$576.49	0.22%	$583.51	0.22%
Option 3	$962.78	0.36%	$981.54	0.37%
*Based on US Census Annual Survey of Manufacturers, 2021 sales for NAICS 3116				

The difference between the incremental and Additive (BPT+BAT) costs are small, which reflects the relatively small cost of the DAF technology compared to the more expensive nutrient removal technologies. For assessing economic achievability, EPA is considering the additive BAT costs. Table VIII-4 shows these full BAT costs broken out by production sub-categories.

Table 0-4. Total Annualized After-Tax BAT Costs by Sub-category for Rule Options in (2022$)

Production Sub-category	Option 1	Option 2	Option 3
Meat First	$62.47	$226.76	$255.60
Meat Further	$3.73	$3.73	$204.91
Poultry First	$114.00	$324.51	$381.48
Poultry Further	$6.06	$6.06	$72.21
Renderer	$10.13	$22.44	$67.32
Total Facility BAT costs	$196.39	$583.51	$981.53

2. BAT Cost-to-Revenue Analyses

Under the Agency's Regulatory Flexibility Act Guidance for assessing impacts of EPA actions on small entities (*Final Guidance for EPA Rulewriters: Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act*. USEPA 2006), facilities incurring costs below one percent of revenue are unlikely to face economic impacts, while facilities with costs between 1 percent and 3 percent of revenue have a higher chance of facing economic impacts, and facilities incurring costs above three percent of revenue have a still higher probability of economic impact.

Tables VIII-5, VIII-6, and VIII-7 show the number of facilities that have BAT CTR ratios that fall into the three above mentioned categories for each option. To provide context for these numbers, the tables display the percentage of facilities that fall into each group, by all facilities incurring cost and by all discharging facilities. For all options, the percentage of discharging facilities with a higher probability of financial impacts is less than one. When considering subcategories, all production types have less than one percent of discharging facilities in the higher-probability category, except for poultry slaughter which has 2.1 percent and 2.5 percent of discharging facilities in this category under options 2 and 3 respectively.

Table VIII-5 Facility-Level BAT After-Tax Compliance Cost-to-Revenue Analysis for Option 1

Sub-categories	Facilities that Discharge	Facilities with BAT Costs	Number of Facilities with a Ratio of				Percentage of Facilities with BAT Costs with Ratio of			Percent of All Discharging Facilities with a Ratio of			
			0%	<1%	≥1 to 3%	≥3%	<1%	≥1 to 3%	≥3%	0%	<1%	≥1 to 3%	≥3%
Meat First	556	30	526	30	0	0	100.0%	0.0%	0.0%	94.6%	5.4%	0.0%	0.0%
Meat Further	2,770	9	2,761	9	0	0	100.0%	0.0%	0.0%	99.7%	0.3%	0.0%	0.0%
Poultry First	238	64	174	61	2	1	95.3%	3.1%	1.6%	73.1%	25.6%	0.8%	0.4%
Poultry Further	175	5	170	3	2	0	60.0%	40.0%	0.0%	97.1%	1.7%	1.1%	0.0%
Rendering	140	18	122	17	1	0	94.4%	5.6%	0.0%	87.1%	12.1%	0.7%	0.0%
Total Number	**3,879**	**126**	**3,753**	**120**	**5**	**1**	**95.2%**	**4.0%**	**0.8%**	**96.8%**	**3.1%**	**0.1%**	**0.0%**

Table VIII-6 Facility-Level BAT After-Tax Compliance Cost-to-Revenue Analysis for Option 2

Sub-categories	Facilities that Discharge	Facilities with BAT Costs	Number of Facilities with a Ratio of				Percentage of Facilities with BAT Costs with Ratio of			Percent of All Discharging Facilities with a Ratio of			
			0%	<1%	≥1 to 3%	≥3%	<1%	≥1 to 3%	≥3%	0%	<1%	≥1 to 3%	≥3%
Meat First	556	85	471	85	0	0	100.0%	0.0%	0.0%	84.7%	15.3%	0.0%	0.0%
Meat Further	2,770	9	2,761	9	0	0	100.0%	0.0%	0.0%	99.7%	0.3%	0.0%	0.0%
Poultry First	238	142	96	130	7	5	91.5%	4.9%	3.5%	40.3%	54.6%	2.9%	2.1%
Poultry Further	175	5	170	3	2	0	60.0%	40.0%	0.0%	97.1%	1.7%	1.1%	0.0%
Rendering	140	28	112	26	2	0	92.9%	7.1%	0.0%	80.0%	18.6%	1.4%	0.0%

Total Number	**3,879**	**269**	**3,610**	**253**	**11**	**5**	**94.1%**	**4.1%**	**1.9%**	**93.1%**	**6.5%**	**0.3%**	**0.1%**

Table VIII-7 Facility-Level BAT After-Tax Compliance Cost-to-Revenue Analysis for Option 3

Sub-categories	Facilities that Discharge	Facilities with BAT Costs	Number of Facilities with a Ratio of				Percentage of Facilities with BAT Costs with Ratio of			Percent of All Discharging Facilities with a Ratio of			
			0%	<1%	≥1 to 3%	≥3%	<1%	≥1 to 3%	≥3%	0%	<1%	≥1 to 3%	≥3%
Meat First	556	137	419	134	1	2	97.8%	0.7%	1.5%	75.4%	24.1%	0.2%	0.4%
Meat Further	2,770	371	2,399	368	1	2	99.2%	0.3%	0.5%	86.6%	13.3%	0.0%	0.1%
Poultry First	238	190	48	173	11	6	91.1%	5.8%	3.2%	20.2%	72.7%	4.6%	2.5%
Poultry Further	175	100	75	97	2	1	97.0%	2.0%	1.0%	42.9%	55.4%	1.1%	0.6%
Rendering	140	115	25	103	12	0	89.6%	10.4%	0.0%	17.9%	73.6%	8.6%	0.0%
Total Number	**3,879**	**913**	**2,966**	**875**	**27**	**11**	**95.8%**	**3.0%**	**1.2%**	**76.5%**	**22.6%**	**0.7%**	**0.3%**

The CTR analysis shows that under Option 1 the BAT costs would be less than 1 percent of revenue for 99.9 percent of discharging facilities, and, per RFA guidance, would be unlikely to face economic impacts. Therefore, EPA proposes to find that Option 1 is economically achievable for the industry as a whole. Given that the BAT CTR results for options 2 and 3 show that 99.6 percent and 99.1 percent of discharging facilities would have costs less than 1 percent of revenues, respectively, EPA solicits comment on whether these options would also be economically achievable.

D. Other Economic Analyses

Sections A, B, and C above address the CWA requirements for determining BPT, BCT, and BAT. Economic effects of each of these technology levels was considered in isolation. This section presents the aggregate costs and impacts of each of the three options on regulated facilities. These analyses cover both facility-level and firm-level effects, employment effects, and market-level effects.

1. Facility Closure Analysis

Estimating the potential closures of existing facilities is the traditional way EPA assesses economic achievability under the CWA. This analysis is based first on financial data reported in the detailed questionnaire, and then extrapolated to the larger universe of facilities based on relevant facility financial and production characteristics.

Under the preferred Option 1, EPA estimated that 16 facilities would potentially close. Under Option 2, EPA estimated that 22 facilities would potentially close. Under Option 3, EPA estimated that 53 facilities would potentially close. This corresponds respectively to 0.3 percent, 0.4 percent, and 1.0 percent of all facilities (including zero discharge facilities). Chapter 5 in the RIA provides more detailed results for the three regulatory options EPA analyzed. Table VIII-8 presents the results of the facility closure analysis.

Table 0-8. Possible Facility Closure Estimates

	Option 1	**Option 2**	**Option 3**
Number of Possible Facility Closures	16 (0.4%)	22 (0.6%)	53 (1.0%)
Number of Facilities with Costs	845	845	1,620
Number of Discharging Facilities	3,879	3,879	3,879
% of Facilities with Costs	1.9%	2.6%	3.3%

Rather than close the facility, some firms may decide to reduce facility production levels to be below the production size thresholds included in each of the options. Although they would be avoiding compliance costs, they would incur the opportunity costs of forgone net revenues. Firms may choose this approach if it is seen as less economically burdensome than the regulatory cost of compliance. This approach is not costed because EPA assumes that it would only be chosen by the firm if it is less costly. However, reducing production to avoid compliance, if chosen by enough facilities could have a measurable effect on industry production. This potential

change in quantity produced is different than the quantity effects discussed in the following market analysis. The potential costs of regulatory compliance could also affect future decisions to expand production at those existing facilities that currently produce below the threshold production levels that are part of each of the regulatory options.

2. Facility and Firm Level Cost-to-Revenue Analyses

EPA conducted a screening-level analysis of each regulatory option's potential impact on discharging MPP facilities and parent entities based on cost-to-revenue ratios. For each of the two levels of analysis (facility and parent entity), the Agency assumed, for analytic convenience and as a worst-case scenario, that none of the compliance costs would be passed on to retailers or back to producers (farmers) and would instead be absorbed by the processing facilities and their parent entities. This assumption overstates the impacts of projected compliance expenditures on a facility since it is more realistic to assume that a portion of these costs in most all cases may be passed up and down the supply chain resulting in small incremental cost increases to producers and consumers. It is, however, a reasonable assumption for a screening-level estimate of the potential cost impacts.

a) Facility-Level Cost-to-Revenue Analysis

EPA used reported revenue estimates in the detailed surveys responses. EPA estimated revenue using reported annual production multiplied by the average revenue per unit of production from the detailed questionnaire for facilities producing the same output type, e.g., slaughtered poultry. Otherwise, EPA used external revenue estimates from proprietary sources such as Hoovers D&B where available or used the mid-point of the production level category assigned to the facility in the FSIS database to first estimate their production level, and then multiplied this by survey average revenue per unit of production, mentioned previously. EPA

then calculated the change in the annualized after-tax costs of the three regulatory options presented in Tables VIII-6, 7 and 8 of this preamble as a percent of baseline annual revenues. See Chapter 4 of the RIA for a more detailed discussion of the methodology used for the facility-level cost-to-revenue analysis. Table VIII-9 presents the facility-level results for each of the three options.

Table 0-9. Facility-Level After-Tax Compliance Cost-to-Revenue Analysis Results by Regulatory Option

Rule Option	Total Dischargers	Facilities with Costs	Number of Facilities with a Ratio of				Percentage of Facilities with Costs with Ratio of			Percent of All Dischargers with a Ratio of			
			0%	<1%	≥1 and 3%	≥3%	<1%	≥1 and 3%	≥3%	0%	<1%	≥1 and 3%	≥3%
1	3,879	845	3,033	838	5	2	99%	0.6%	0.2%	78.2%	21.6%	0.1%	0.1%
2	3,879	845	3,033	828	12	5	98%	1.4%	0.6%	78.2%	21.4%	0.3%	0.1%
3	3,879	1,620	2,257	1,576	31	13	97%	1.9%	0.8%	58.2%	40.7%	0.8%	0.3%

Under the preferred Option 1, EPA estimated that seven facilities (0.18 percent of total dischargers) would incur incremental costs greater than or equal to one percent of revenue, including two facilities that have costs greater than or equal to three percent of revenue, and an additional 838 facilities would incur costs that are less than one percent of revenue. Under Option 2, EPA estimated that 17 (0.44 percent of total dischargers) facilities would incur incremental costs greater than or equal to one percent of revenue, including five facilities that have costs greater than or equal to three percent of revenue, and an additional 828 facilities would incur costs that are less than one percent of revenue. Under Option 3, EPA estimated that 44 facilities (1.13 percent of total dischargers) would incur incremental costs greater than or equal to 1 percent of revenue, including 13 facilities that have costs greater than or equal to three

percent of revenue, and an additional 1,578 facilities would incur costs that are less than 1 percent of revenue. For each of these three options, the remaining discharging facilities would incur no costs. Chapter 4 in the RIA provides more detailed results for the three regulatory options EPA analyzed.

b) Firm-Level Cost-to-Revenue Analysis

EPA also assessed the economic impact of the regulatory options at the parent entity level. The screening-level cost-to-revenue analysis at the parent entity level provides insight on the impact on those entities that own one or more MPP facilities. In this analysis, the domestic parent entity associated with a given facility is defined as the entity with the largest ownership share in the facility. For each parent entity or firm, EPA compared the incremental change in the total annualized after-tax costs and the total revenue for the entity to baseline (see Chapter 4 of the RIA for details). EPA based ownership and annual revenues directly on questionnaire responses for those facilities that completed detailed questionnaires. Ownership was also based on questionnaire responses. Revenue information, however, was based on external sources of financial information, mentioned above. Where questionnaire responses were not available, ownership and firm revenue information were based on matching these facilities with firms contained in the external firm data (Hoovers D&B) that have reported business activity under NAICS category 3116. For facilities where a match could not be made, facilities were assumed to be owned by a firm that owned no other businesses and has no other sources of revenue. This assumption likely leads to an overestimation of the cost-to revenue ratio for many of these entities that may also have additional sources of revenue. Table VIII-10 provides firm-level cost-to-revenue results.

Table 0-10. Firm-Level CTR Screening Analysis Results

Rule Option	Firms with MPP Facilities	Number Firms with a Ratio of				Percent of Firms with a Ratio of			
		0%[a]	> 0 and <1%	≥1 and <3%	≥3%	0%[a]	> 0 and <1%	≥1 and <3%	≥3%
1	4,127	3,730	394	3	0	90%	10%	0.1%	0.0%
2	4,127	3,730	393	3	1	90%	10%	0.1%	0.0%
3	4,127	3,129	980	14	4	76%	24%	0.4%	0.1%

a. These firms own only facilities that already meet discharge requirements for the wastestreams addressed by a given regulatory option and are therefore not estimated to incur any compliance technology costs.

Like the facility-level analysis above, cost-to-revenue ratios provide screening-level indicators of potential economic impacts, this time to the owning entities; higher ratios suggest a higher probability of economic impacts. EPA estimates that the number of entities owning existing MPP facilities to be 4,127 firms. Under the proposed rule Option 1, there would be 3,730 firms with no costs and 394 with costs less than one percent of revenue. EPA estimates that three firms would incur incremental costs greater than or equal to one percent of revenue and less than three percent of revenue. No firms are expected to incur costs greater than or equal to three percent of revenue. Under Option 2, there would be 3,730 firms with no costs and 393 with costs less than 1 percent of revenue. EPA estimates that four firms would incur incremental costs greater than or equal to 1 percent of revenue and only one of these would incur costs greater than or equal to 3 percent of revenue. Under Option 3, there would be 3,129 firms with no costs and 980 with costs less than 1 percent of revenue. EPA estimates that 18 firms would incur incremental costs greater than or equal to 1 percent of revenue and, of these, four would incur costs greater than or equal to 3 percent of revenue. Chapter 4 in the RIA provides more detailed results for the three regulatory options EPA analyzed.

c) Small Business Impacts

Under the Regulatory Flexibility Act (RFA) and Small Business Regulatory Enforcement Fairness Act (SBREFA), EPA is required to estimate the potential economic impacts of the rule

on small businesses. The definition of small business varies by NAICS categories and for this industrial category the definition is based on employment levels provided in Table VIII-11 below. Firm employment levels are based on questionnaire responses when available. For non-respondents, firm employment estimates from Hoovers D&B are used if the firm was matched to one or more facilities. For remaining firms USDA facility inspection data employment categories for facilities are used to estimate if the owners are a small business. For more information on this approach see the SBREFA screening analysis section of the RIA.

Table 0-11. Small Business Administration Small Business Size Standards for Meat and Poultry Processing Industry

NAICS Code	NAICS Industry Description	Size Standard in Employee #s
311611	Animal (except Poultry) Slaughtering	1,150
311612	Meat Processed from Carcasses	1,000
311613	Rendering and Meat Byproduct Processing	750
311615	Poultry Processing	1,250

For each of the three options, EPA estimated the number of small parent entities that incur annual compliance costs that fall into one of three categories: less than 1 percent of annual revenue; between 1 percent and less than 3 percent of annual revenue; and 3 percent or more of annual revenue. Table VIII-12 presents the results of the CTR test for all small entities that own MPP dischargers. Table VIII-13 shows aggregate revenue and cost for small firms by process type. EPA conservatively assumes that entities with an unidentified size are large. While this assumption potentially reduces the number of identified small entities, it provides a conservative estimate of the percentage of small entities with impacts, since none of the entities with an unidentified size have a CTR ratio greater than one percent under any of the regulatory options.

Table 0-12. Small Firm-Level CTR Screening Analysis Results

Entity	Total #	Number Small Firms with a Ratio	Percent of Small Firms with a Ratio of

Type	of Small Firms	of							
		0%[a]	> 0 and <1%	≥1 and <3%	≥3%	0%[a]	> 0 and <1%	≥1 and <3%	≥3%
Option 1	3,233	3,137	95	1	0	97%	3%	0.0%	0.0%
Option 2	3,233	3,137	94	1	1	97%	3%	0.0%	0.0%
Option 3	3,233	2,970	248	11	4	92%	8%	0.0%	0.0%
a. These entities own only facilities that already meet discharge requirements for the wastestreams addressed by a given regulatory option and are therefore not estimated to incur any compliance technology costs.									

Table 0-13. Aggregate Revenue and Costs for Small Firms by Process Type

Option 1				
Process Type[a]	Total # Small Firms with Dischargers	Total # Small Firms with Costs	Aggregate Revenue (millions, 2022$)	Aggregate Costs (millions, 2022$)
Meat first	372	22	$83,328	$4.5
Meat further	1,799	31	$61,517	$0.1
Poultry first	55	16	$20,008	$13.6
Poultry further	47	20	$9,363	$3.0
Render	23	7	$6,019	$1.0
Total	2,296	96	$180,235	$22.3
Option 2				
Process Type[a]	Total # Small Firms with Dischargers	Total # Small Firms with Costs	Aggregate Revenue (millions, 2022$)	Aggregate Costs (millions, 2022$)
Meat first	372	22	$83,328	$32.7
Meat further	1,799	31	$61,517	$0.1
Poultry first	55	16	$20,008	$41.6
Poultry further	47	20	$9,363	$3.0
Render	23	7	$6,019	$1.0
Total	2,296	96	$180,235	$78.5
Option 3				
Process Type[a]	Total # Small Firms with Dischargers	Total # Small Firms with Costs	Aggregate Revenue (millions, 2022$)	Aggregate Costs (millions, 2022$)
Meat first	372	54	$97,768	$44.8
Meat further	1,799	149	$151,897	$38.8
Poultry first	55	25	$20,627	$63.1
Poultry further	47	25	$9,521	$11.9
Render	23	9	$6,029	$10.0
Total	2,296	262	$285,841	$168.6
a. Process type assigned to firms based on highest production.				

The results from the Small Firm-Level CTR Screening Analysis demonstrate that there is not a significant financial burden on a substantial number of small firms that own MPP facilities. Likewise, the results also show that small firms do not bear a disproportionate financial burden relative to large firms. These results demonstrate that the use of facility production size thresholds for each of the three options ensures that the primary economic burden of the rule is born by large facilities and firms.

3. Market Effects

The analyses thus far have focused either at the individual facility or firm level but have not directly addressed the cumulative effects of the rule options. EPA examined the effects of the regulatory options on the national markets for beef, pork, chicken, and turkey. EPA developed linear domestic and trade demand and supply equations for each meat product based on price elasticities from USDA data and other published sources. To estimate the impacts of the regulatory options, the domestic supply curves were adjusted to incorporate the after-tax annualized compliance costs incurred by producers in each meat product market, causing a shift in each supply curve and a decrease in domestic supply. After estimating the post-regulatory equilibrium for each meat product market, market-level impacts on prices and quantities were estimated. Tables VIII-14 and VIII-15 provide the percentage change in quantity and prices respectively for each meat product and rule option combination. The overall effects on meat product supplies and prices are sufficiently small under all three options that they are unlikely to have a noticeable effect on producer or consumer behavior. For more information on the market analysis methodology and results see Chapter 6 of the RIA.

Table 0-14. Post-Compliance Decrease in Meat Market Supplies by Rule Option

	% Change Total Supply		
Meat Product	**Option 1**	**Option 2**	**Option3**

Beef	-0.006%	-0.018%	-0.027%
Pork	-0.017%	-0.051%	-0.073%
Chicken	-0.014%	-0.028%	-0.086%
Turkey	-0.010%	-0.021%	-0.063%
Total	-0.012%	-0.031%	-0.065%

Table 0-15. Post-Compliance Increase in Meat Market Prices by Rule Option

Meat Product	% Change in Prices		
	Option 1	**Option 2**	**Option 3**
Beef	0.01%	0.02%	0.03%
Pork	0.01%	0.03%	0.05%
Chicken	0.01%	0.02%	0.05%
Turkey	0.00%	0.01%	0.02%

4. Employment Effects

In addition to addressing the costs and impacts of the regulatory options, EPA estimated the potential impacts of this rulemaking on employment. Employment effects can be both positive and negative as well as temporary or permanent. The employment analyses performed for the proposed rule measure labor changes in terms of full time equivalent (FTE) labor inputs. EPA measures the short-term employment effects directly due to estimated closures as well as the long-term employment effects from changes in production levels at the new market equilibrium. Employment loss due to facility closures is considered transitory as some of the production that occurred at these facilities will quickly move to other facilities with spare capacity. Eventually new and expanding existing facilities will take on much of the remaining production that would have occurred at the closed facilities. As these shifts in production occur so too will employment opportunities.

Closures are not the only rule impact affecting employment. As just described in the preceding market analysis section, overall production is likely to go down slightly once the

markets for meat products reach a new equilibrium of supply and demand. Lower production levels would likely result in long-term job losses. The number of long-term possible job losses across the whole industry due to decreased production are 65, 161, and 339 for options 1, 2, and 3 respectively. Relative to the total industry employment levels, these job losses translate to 0.0002 percent, 0.001 percent, and 0.0032 percent, respectively. The annual operation and maintenance costs for the new treatment technologies include labor costs, based on typical dollar per hour wage rates for the industry. These labor hours can be used to estimate the additional employees necessary to operate and maintain the treatment technologies. These new jobs more than offset those lost due to lower production levels for all three options, resulting in a net gain of 166, 669, and 1,603 jobs respectively. Table VIII-16 presents the possible short-term and long-term employment impacts of the three regulatory options being considered. For more on the employment analyses see Chapter 7 of the RIA.

Table 0-16. Possible employment impacts estimated by regulatory option (FTE*)

Employment Impact Category	Option 1	Option 2	Option 3
Short-term Employment Losses due to Possible Closures	-16,917	-17,461	-20,205
Short-term losses as % of total employment	-0.03%	-0.03%	-0.04%
Long-term Employment Losses due to Decreased Production	-65	-161	-339
Long-run/labor to Operate Treatment Technology	166	669	1,942
Net Long-term Changes in Employment	101	508	1,603
Total long-run as % of total employment	0.0002%	0.001%	0.0032%

*One FTE equivalent to 2080hrs/yr.

5. Chlorides Removal Costs and Impacts

EPA is taking comment on the inclusion of chlorides removal limits. EPA is considering establishing a zero discharge of pollutants requirement for high chloride waste streams for

facilities producing more than 5 million pounds per year with high chlorides processes. The technology costs considered for this requirement involve segregating the high chloride waste streams from other process wastewater and managing these high chloride streams through sidestream evaporation. Details on the costs and economic impacts of the chlorides removal provision can be found in the TDD and the RIA, respectively.

IX. Pollutant Loadings

A. Estimation of Existing Industry Pollutant Discharges

In developing ELGs, the CWA calls for EPA to identify the effluent reduction from each level of control (CWA Section 304(b)(2)(A)(BAT), (b)(4)(A)(BCT), and (b)(1)(A)(BPT). 33 U.S.C. § 1314(b)(2)(A)(BAT); 1314(b)(4)(A)(BCT), and 1314(b)(1)(A)(BPT)). To estimate effluent reduction, or removals, EPA first estimates on an annual, per facility basis, the pollutant load discharged today. EPA then estimates pollutant discharge loads and removals that would result from the proposed regulatory options. As described in section VII, the three proposed regulatory options apply different combinations of wastewater treatment technology to specific sets of facilities based on facility production size thresholds. EPA estimates pollutant discharge loads and removals for two MPP waste streams: 1) MPP process wastewater and 2) high chlorides wastewater (as a segregated waste stream).

Supporting analyses and datasets for the MPP loadings calculations include the following:

- MPP Industry Profile – identifies the MPP facilities impacted by the proposed rule and key inputs for the loadings/removal analysis including processing type, discharge status (i.e., direct, indirect, zero discharge), and discharge flow rate for

both process wastewater and high chlorides wastewater (*Meat and Poultry Products (MPP) Profile Methodology Memorandum*. USEPA. DCN MP00306).

- Treatment in Place (TIP) Analysis –identifies existing wastewater treatment based on facility-specific data, where possible, and assigns existing wastewater treatment to facilities without data based on MPP Questionnaire response data and engineering best judgment (*Treatment in Place (TIP) Analysis for the Meat and Poultry Products (MPP) Proposed Rule*. USEPA. DCN MP00191).
- Pollutants of Concern (POC) Analysis –identifies the pollutants present in untreated MPP process wastewater at treatable levels (*Pollutants of Concern (POC) Analysis for the Meat and Poultry Products (MPP) Proposed Rule*. USEPA. DCN MP00190).
- Analytical Database – compilation of all wastewater sampling from publicly available sources or collected as part of the proposed rule. The database includes facility-specific wastewater monitoring data from the MPP Questionnaire, EPA sampling, 2021 Discharge Monitoring Report (DMR) data for select MPP facilities, responses to EPA's CWA Section 308 data requests, and any other data on MPP process wastewater provided to EPA (e.g., from site visits or other discussions with industry) (*Analytical Database Methodology for the Meat and Poultry Products Proposed Rulemaking*. USEPA. DCN MP00303).

For the MPP process waste stream, pollutant loads and removals were estimated for the wastewater treatment technology systems described in the regulatory options: phosphorus removal by chemical precipitation for direct and indirect dischargers, nitrogen removal by biological treatment to achieve full denitrification for direct and indirect dischargers, select

conventional pollutant (e.g. BOD, TSS, Oil & Grease) removal by screening and dissolved air flotation (DAF) for indirect dischargers, and high chlorides sidestream evaporation for direct and indirect dischargers. EPA estimated facility pollutant discharge loads and removals that would result from these four technology systems.

For the MPP high chlorides waste stream, pollutant loads and removals were estimated based on evaporation technology, and this was applied to both direct and indirect facilities with a high chlorides waste stream.

Baseline pollutant loadings and removals were calculated using the facility flows and the effluent pollutant concentrations associated with the TIP analysis. Using data from the MPP Questionnaire and existing data, EPA identified facility-specific details on facility operations (type of processing), discharge status, and existing TIP. If no relevant treatment is currently in place at a facility, the raw process wastewater concentrations were used.

Effluent loads for each facility were calculated for the POCs for the treatment system considered under the regulatory options by multiplying the pollutant concentration associated with the wastewater treatment technology by the wastewater flow rate. For indirect dischargers, (i.e., discharges to a POTW), EPA accounted for pollutant removal that occurs at the POTW to calculate the baseline and regulatory option loadings. Indirect discharge loads were estimated at the POTW effluent (i.e., following treatment at the POTW to account for pollutant removal that occurs at the POTW) to represent the pollutant load to the receiving water. The pollutant load removals were calculated as the difference between the baseline load and the load resulting with the treatment technology in place.

B. Summary of Incremental Changes of Pollutant Loadings and Removals from

Regulatory Options

Table IX-1 summarizes the net reduction in annual pollutant loadings, compared to baseline, associated with each regulatory option. Removals for total nitrogen, total phosphorus, chlorides the conventional pollutants BOD, TSS, oil & grease are shown here. Additional pollutants are also removed by the technologies. More information on the pollutant loads is available in the TDD. Compared to the existing rule baseline, all proposed regulatory options result in decreased pollutant loadings to surface waters.

Table 0-1. Net Reductions in Annual Pollutant Loadings for Key Pollutants

Regulatory Option	Reductions[c] in Annual Pollutant Loadings million lb/yr (% reduction)			
	Nitrogen	Phosphorus	Conventional[a]	Chlorides[b]
1	9 (10%)	8(37%)	80 (31%)	477 (98%)
2	45 (49%)	16 (78%)	167 (64%)	477 (98%)
3	76 (83%)	20 (94%)	226 (87%)	477 (98%)

a. Conventional Pollutant Removal includes BOD, O&G, TSS
b. Chlorides has same removal under each option
c. Pollutant reductions include removals by POTWs

X. Non-Water Quality Environmental Impacts

The elimination or reduction of one form of pollution may create or aggravate other environmental problems. Therefore, CWA Sections 304(b) and 306 require EPA to consider non-water quality environmental impacts (including energy requirements) associated with ELGs. To consider these factors, EPA considered the potential impact of the technology basis on energy consumption, air pollution, and solid waste generation. As shown below, EPA anticipates that all of the proposed rule options would produce minimal non-water quality environmental impacts and as such proposes that they are acceptable. Additional information about the analysis of these non-water quality impacts is contained in the TDD.

A. Energy Requirements

MPP Facilities use energy when operating processing equipment, operating the facility buildings, and operating wastewater treatment systems. For this proposal, EPA considers whether there would be an associated change in the incremental energy requirements compared to baseline. Energy requirements vary depending on the regulatory option evaluated and the current operations of the facility. Therefore, as applicable, EPA estimates the increase in energy usage in (megawatt hours, MWh) for equipment added to the plant systems or in consumed fuel (gallons). EPA sums the estimated increase to calculate the net change in energy requirements from baseline for the regulatory options.

EPA estimates the amount of energy needed to operate the additional wastewater treatment systems based on conventional pollutant (e.g., BOD, TSS, Oil & Grease) removal by screening and DAF, phosphorus removal by chemical precipitation, nitrogen removal by biological treatment to achieve full denitrification, and high chlorides removal by sidestream evaporation. Table X-1 of this preamble shows the net change in annual electrical energy usage associated with the regulatory options compared to baseline. The table values assume a zero net increase for conventional pollutant treatment of indirect dischargers, as the burden of treatment is shifted from the POTW to the MPP facility. Table X-1 also does not include the additional energy demand for treatment of high chlorides wastewater, which is estimated to be an additional 349,000 MWh per year.

Table X-1. Estimated Incremental Change in Energy Requirements Associated with Regulatory Options Compared to Baseline

Non-water quality environmental impact	Energy use associated with regulatory Options		
	Option 1	Option 2	Option 3
Increase in Electrical Energy usage (MWh)	104,208	386,448	557,538
Increase as % of total	0.0000025%	0.0000094%	0.0000136%

US electric power generated in 2021[35]			

By comparison, electric power generation facilities generated 4,108 billion MWh of electric power in the United States in 2021 (EIA, 2021).[22] All of the proposed options would result in a negligible increase in the amount of energy generation required nationwide.

B. Air Pollution

EPA proposes to find that wastewater treatment processes evaluated in this proposed rule would not generate significant air emissions above the current emissions, either directly from the facility or indirectly from the facilities that provide energy to MPP facilities. Possible non-odorous gases that may be emitted from these processes include nitrogen and carbon dioxide. EPA expects a slight increase in nitrogen gas generated over the current baseline because it would be formed during the denitrification process and would escape to the atmosphere. Since nitrogen comprises over 78 percent of the Earth's atmosphere and is not considered a greenhouse gas, the additional generation is not considered to pose an environmental impact. Carbon dioxide will be released when BOD is oxidized by oxygen-containing compounds. However, the BOD being treated would generally not increase but rather just the location of treatment would change (POTW vs MPP facility). Therefore, there would generally be no significant incremental increase in carbon dioxide over current treatment levels.

Odors are the only significant air pollution problem associated with the treatment of MPP wastewaters and generally are associated with anaerobic conditions. Thus, flow equalization basins, DAF units, and anaerobic lagoons are possible sources of malodors, especially for

[22] https://www.eia.gov/electricity/annual/archive/2021/pdf/epa.pdf

indirect dischargers who may not currently do pretreatment prior to discharging to a POTW. Potential odorous substances associated with MPP wastewater include ammonia, hydrogen sulfide, and organic compounds. Ammonia in MPP wastewaters is typically due to breakdown of more complex substances and can be released under certain circumstances. However, aerobic nitrifying conditions will favor keeping ammonia in solution as it is converted to nitrate, meaning that odors will generally be suppressed. In addition, maintenance of pH around neutral conditions will disfavor stripping ammonia, leaving it in the wastewater to be oxidized or assimilated. Furthermore, denitrification processes will favor additional conversion of ammonia. Thus, any incremental ammonia generation would be minimal. The chemical precipitation process to remove phosphorus is not expected to generate any additional odors.

Hydrogen sulfide can be formed under anaerobic and anoxic conditions such as in the denitrification reactors. Hydrogen sulfide generation requires the presence of sulfate in the wastewater, which is typically low in MPP wastes. (In most cases the source of sulfates in MPP wastewater is the source water supply.) In addition, the formation of sulfide is less favored than the reduction of nitrate to nitrogen, meaning that under most circumstances, sulfide would not be formed to a greater degree than is currently the case, especially if the facility is well-managed.

Volatile odorous organic compounds can be generated in anaerobic lagoons. If specific facilities have odor difficulties, covers over the lagoons can be used to capture odorous substances that are then subsequently destroyed by some oxidation or combustion process. Some facilities capture anaerobically generated methane for fuel; if that gas stream must be scrubbed before use, the waste would be recycled to the wastewater treatment plant, resulting in no net environmental impact. Such oxidation and combustion processes would potentially result in additional carbon dioxide generation; however, that generation constitutes minimal incremental

generation, since the organic substances involved would have gone through oxidation naturally. Typically, odorous organic compounds are well-destroyed in aerobic systems. Overall, the incremental change in odor problems associated with this proposed regulation are expected to be small. Odor problems usually are significant only when the sulfur content of MPP wastewaters is high, especially when treatment facilities are not well managed. Generally, MPP wastewater treatment facilities using anaerobic processes for treating wastewater with a low sulfur concentration have few odor problems. At such facilities, maintaining a naturally occurring layer of floating solids in anaerobic contact basins and lagoons generally minimizes odors. Thus, the technology options should not increase emissions of odorous compounds from well-managed MPP wastewater treatment facilities. If a facility uses nitrification to meet the ammonia limitations, then any ammonia odors would be minimal because the process keeps the ammonia in solution as it is converted to nitrate. However, using anaerobic treatment for initial BOD reduction before aerobic treatment would increase emissions of methane and volatile organic compounds, but the increases should be negligible given today's extensive use of lagoons and other anaerobic processes in MPP wastewater treatment. In addition, covering anaerobic lagoons and flaring the gas captured can reduce these emissions. If the volume of captured gas is sufficient, it can be used as a fuel to produce process heat or electricity. EPA observed facilities capturing gas for use as fuel during site visits.

C. Solid Waste Generation

EPA estimates that compliance with the proposed rule would not significantly increase the amount of wastewater treatment sludge generated for the meat and poultry processing industry. Table X-2 estimates the incremental sludge production increases for the proposed rule.

Table X-2. Estimate of Incremental Sludge Production Increases

Non-water quality environmental impact	Incremental Sludge Production associated with regulatory Options		
	Option 1	Option 2	Option 3
Sludge Production (tons/year)	384,359	995,804	1,213,782

The estimates of sludge production in Table X-2 are based on the concentrations of BOD entering the biological part of the treatment system after pretreatment (i.e., screening, DAF). The sludge yield coefficient for the denitrification process is lower than the coefficient for the aerobic process; therefore, the amount of sludge generated per BOD unit would be lower for the denitrification part than the nitrification part.

The values presented in Table X-2 represent the total sludge production for the modeled unit processes. The values in Table X-2 assume a zero net increase in solids production from conventional pollutant treatment at affected indirect dischargers, as the burden of treatment shifts from the POTW to the MPP facility. Additional solids are expected to be generated from chemical phosphorus removal as a result of this proposed rule. Generally, a facility will either combine the solids generated from this process with other process solids, or it may elect to process and resell the reclaimed phosphorus on the private market. If a facility selects an aluminum based chemical process for precipitation, this may limit the ability of the solids to be land applied. EPA also expects that more emphasis on pollution prevention (e.g., by increased segregation of waste) could further reduce sludge generation, though it is not expected to yield significant reductions. Examples of such pollution prevention practices include segregation of high chlorides wastewaters from the main treatment stream, allowing the solids to be extracted more economically from the waste steam and reducing the overall volume of sludge.

XI. Environmental Assessment

A. Introduction

The environmental assessment for the proposed rule reviewed currently available literature on the documented environmental and human health impacts of MPP wastewater discharges and conducted modeling to estimate impacts of MPP discharge to surface waters and downstream environments at both localized and regional scales. EPA's review of the scientific literature documents cases of the extensive impacts of MPP wastewater discharges on human health and the environment and a full description of EPA's modeling methodology and results are provided in the Environmental Assessment document. EPA modeled the impacts of MPP discharges at baseline conditions (pre-rule conditions) and the improvements that may result if the proposed options were implemented.

It is well established that effluent guidelines are not required to consider the impacts on receiving water quality *See, e.g., Southwestern Electrical Power Co. v. United States,* 920 F.3d 999, 1005 (5th Cir. 2019). (The CWA "requires ELGs to be based on technological feasibility rather than on water quality," citing *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 130-31, (1977)). That is, the Administrator must "require industry, regardless of a discharge's effect on water quality, to employ defined levels of technology to meet effluent limitations" *Id.,* citing *Am. Petroleum Inst. v. EPA,* 661 F.2d 240, 343-44 (5th Cir. 1981). ELGs are "technology-based rather than harm-based" insofar as they "reflect the capabilities of available pollution control technologies to prevent or limit different discharges rather than the impact that those discharges have on the waters." *Id.,* citing *Tex. Oil and Gas v. EPA*, 161 F.3d 923, 927 (5th Cir. 1998). Nevertheless, there is great public interest in understanding the benefits of EPA's effluent

guidelines and E.O. 12866, 12898, and 14096 require an assessment of the environmental benefits of federal rulemakings.

B. Summary of Environmental and Human Health Impacts

As discussed in the Environmental Assessment document, current scientific literature as well as EPA's own data indicated that MPP wastewaters contain large amounts of a wide range of harmful pollutants, which contribute to extensive environmental impacts and can have detrimental effects on human health through multiple exposure routes.

Nutrient overloading of surface waters is a national issue, and this concern extends to surface waters receiving MPP wastewater, with 36 percent and 37 percent of catchments downstream[23] of direct and indirect dischargers, respectively, are impaired for nutrients and/or oxygen demand. Excess nutrients in aquatic environments, or eutrophication, is the most documented impact and consequentially can result in the accelerated growth of bacteria and/or algae, reducing available dissolved oxygen (DO) and limiting the ability of the waterbody to support aquatic life. Examples include biodiversity loss, impacts to fish development and reproduction, as well as fish kills from hypoxic, or deoxygenated, waters. Low DO levels can also release toxic metals from sediments, further contaminating aquatic habitat (Li et al. 2013).[24] Often spurred by eutrophication, some algal blooms release toxins into the water, which can result in sickness and/or death in exposed terrestrial animals and people.

[23] Within 25 river miles downstream

[24] Li, H., Shi, A., Li, M., & Zhang, X. 2013. *Effect of pH, Temperature, Dissolved Oxygen, and Flow Rate of Overlying Water on Heavy Metals Release from Storm Sewer Sediments.* Journal of Chemistry, 2013, 434012. doi:10.1155/2013/434012

Excess nutrients can impact human health through several pathways, both direct and indirect. High nitrate concentrations in drinking water can lead to infant methemoglobinemia (blue baby syndrome), colorectal cancer, thyroid disease, and neural tube defects (USEPA. 2000. EPA-822-B-00-002) (Ward et al. 2018).[25] High nutrient levels in drinking water sources can also lead to objectionable tastes and odors, and potentially increase drinking water treatment costs to remove nitrates. In terms of indirect health impacts, the growth of harmful algal and bacteria due to eutrophication can potentially result in the contamination of shellfish with fecal coliform bacteria or algal toxins. Adverse health impacts from the consumption of contaminated shellfish can include paralytic, diarrhetic, amnesic, and neurotoxic shellfish poisoning (USEPA. 2015. EPA- 820R15102) (Hoagland et al. 2002).[26]

Drinking water quality can be impacted by several other pollutants present in MPP wastewater in addition to nutrients. Consumption of water contaminated with pathogenic bacteria can pose serious health risks, ranging from gastrointestinal illness like diarrhea, vomiting, and fever, to sepsis and toxic shock syndrome in extreme cases (Baskin-Graves et al. 2019).[27] High levels of suspended solids can harbor bacteria in drinking water sources, making treatment more

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[25] Ward, M. H., Jones, R. R., Brender, J. D., de Kok, T. M., Weyer, P. J., Nolan, B. T., van Breda, S. G. 2018. *Drinking Water Nitrate and Human Health: An Updated Review.* International Journal of Environmental Research and Public Health, 15(7), 1557. doi:10.3390/ijerph15071557

[26] Hoagland, P., Anderson, D. M., Kaoru, Y., & White, A. W. 2002. *The Economic Effects of Harmful Algal Blooms in the United States: Estimates, Assessment Issues, and Information Needs.* Estuaries, 25, 819-837.

[27] Baskin-Graves, L., Mullen, H., Aber, A., Sinisterra, J., Ayub, K., Amaya-Fuentes, R., & Wilson, S. 2019. *Rapid Health Impact Assessment of a Proposed Poultry Processing Plant in Millsboro, Delaware.* International Journal of Environmental Research and Public Health, 16(18). doi:10.3390/ijerph16183429

difficult. Arsenic, which is present in some sanitizers, may be introduced to MPP wastewater through contact with offal or during nightly equipment cleaning operations. Arsenic is both a carcinogen and a toxin and can have reproductive impacts if ingested via drinking water (Witkowska et al. 2021).[28] Some heavy metals have been detected in MPP wastewater, which if then found at sufficient concentrations in drinking water can pose health risks.

Pollutants found in MPP wastewater also compromise aquatic and terrestrial biota survival and reproduction. For example, biodiversity loss can occur when aquatic organisms are exposed to elevated levels of chlorides, killing or impairing freshwater species, and allowing for the proliferation of more salt tolerant organisms (Weber-Scannell and Duffy. 2007).[29] Suspended solids increase turbidity, blocking light infiltration of surface waters and limiting primary production, thereby impacting food availability for higher trophic levels. Some metals common in MPP wastewater streams, such as zinc and copper, have been identified as toxic to crops when biosolids generated from MPP wastewater treatment were used as a soil supplement, and these metals can similarly limit primary production at low concentrations (Gerber et al. 2017)[30] (Amoatey and Baawain. 2019).[31]

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[28] Witkowska, D., Słowik, J., & Chilicka, K. 2021. *Heavy Metals and Human Health: Possible Exposure Pathways and the Competition for Protein Binding Sites.* Molecules, 26(19). doi:10.3390/molecules26196060

[29] Weber-Scannell, P., & Duffy, L. 2007. *Effects of Total Dissolved Solids on Aquatic Organisms: A Review of Literature and Recommendation for Salmonid Species.* American Journal of Environmental Sciences, 3. doi:10.3844/ajessp.2007.1.6

[30] Gerber, M. D., Lucia, T., Correa, L., Neto, J. E. P., & Correa, É. K. 2017. *Phytotoxicity of effluents from swine slaughterhouses using lettuce and cucumber seeds as bioindicators.* Science of The Total Environment, 592, 86-90. doi: https://doi.org/10.1016/j.scitotenv.2017.03.075

[31] Amoatey, P., & Baawain, M. S. 2019. *Effects of pollution on freshwater aquatic organisms.* Water Environment Research, 91(10), 1272-1287. doi: https://doi.org/10.1002/wer.1221

C. Environmental Assessment Methodology

The environmental assessment for the proposed rule reviewed currently available literature on the documented environmental and human health impacts of MPP wastewater discharges and conducts modeling to estimate the impacts of these discharge to surface waters and downstream environments at both localized and regional scales. EPA modeled the water quality impacts of MPP discharges at baseline conditions (pre-rule conditions) and the improvements that would likely result after the implementation of the rule in both a set of smaller case study watersheds as well as in larger watersheds that represent diverse land areas across the continental U.S.

To evaluate the potential water quality impacts of the proposed rule, EPA developed models of both the selected case study watersheds and larger, watersheds using the Hydrologic and Water Quality System (HAWQS) 2.0 and the Soil and Water Assessment Tool (SWAT) (Neitsch et al. 2011).[32] The model delineates subbasins and reaches at the resolution of 14-digit hydrologic unit codes (HUCs)[33]. While these models simulate impacts on eutrophication in receiving streams, they are limited to a daily timestep, and EPA is considering a more detailed model analysis of algal and DO kinetics. Additional details on model setup, including calibration results, can be found in Appendix A of the Environmental Assessment document.

EPA identified three case study locations to help demonstrate the water quality effects of the proposed rule at a fine spatial scale. Case study locations were chosen based on the

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[32] Neitsch, S.L., Williams, J.R., Arnold, J.G. and Kiniry, J.R. 2011. *Soil and Water Assessment Tool Theoretical Documentation Version 2009*. Texas Water Resources Institute, College Station.

[33] https://www.usgs.gov/tools/hydrologic-unit-maps

contributions of NPDES-permitted dischargers, areas of existing impairment(s), and availability of observed data to facilitate model calibration. Regarding NPDES-permitted discharger contributions, watershed locations were considered if they contained one or more discharger with significant nutrient loads[34] and were upstream or headwater locations as these areas were less likely to be overwhelmed by baseline nonpoint source loads or greatly dilute point source contributions with the volume of receiving water. Watersheds with previously documented water quality impairments or published Total Maximum Daily Loads[35] were also prioritized, especially if the impairments are due to common pollutants from the MPP industry, such as nutrients, pathogens, organic enrichment (i.e., BOD), or sediment.

EPA also modeled larger watersheds to demonstrate the water quality impacts of the proposed rule over a greater portion of the nation covering a wider variety of land area types than the case studies. Three HUC2 watershed[36] were selected for modeling based on the presence of both MPP facilities routing wastewater effluent directly to waters of the U.S. (direct dischargers) and facilities discharging wastewater to an offsite POTW (indirect dischargers). Watersheds that had been previously calibrated and/or had adequate observed data[37] available were prioritized.

To further understand the environments and waterbody use types which may be impacted by MPP wastewater discharge under baseline conditions, EPA conducted a GIS analysis to

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[34] An initial filter for "significant nutrient loads" was 100 kg/day.

[35] The maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant.

[36] HUC2 watersheds are regional divisions and average 177,560 square miles across the U.S.

[37] Adequate observed data refers to in-stream flow, TSS, TN, and TP measurements taken within the watershed selected for modeling that allowed for calibration to be successfully completed. When available data was insufficient, calibration parameters from similar watersheds (as identified by a cluster analysis) within the same HUC2 region were applied. See Appendix A of the BCA for additional details.

identify sensitive habitats downstream of direct and indirect MPP facility final wastewater outfalls across the nation. EPA used publicly available databases to identify impaired waters, fisheries (shellfishing, recreational, and commercial fishing), threatened and endangered species habitat and protected areas, priority waterbodies, and recreational areas within 25 river miles of a process wastewater outfall. EPA also identified the number of each sensitive environment type that would be expected to experience improved water quality under proposed rule Options. See Chapter 4 and Appendix B of the EA for details regarding datasets used and GIS methodologies.

D. Results from the Environmental Assessment

EPA focused its quantitative analyses on the environmental and human health impacts associated with exposure to pollutants via the surface water pathway. Both direct and indirect discharge sources were considered in these analyses and models. These analyses concentrated on improvements in surface water quality; impacts to sensitive environments, including wildlife habitat, fisheries, and impaired waters; and impacts to human health from consumption of contaminated drinking water or exposure to contaminated surface waters via recreational activities.

1. Improvements in Surface Water Quality

EPA estimated that reduced pollutant loadings to surface waters will improve water quality by reducing nutrient concentrations in all waters immediately downstream of MPP wastewater outfalls under proposed rule options in the case study modeling. When the most stringent technology options were applied (representing regulatory Option 3) nutrient concentrations changed minimally in certain watersheds (less than 1 percent reductions), while other receiving waters could on average see up to 81 percent and 83 percent reductions in TP and TN, respectively.

The pollutants associated with MPP wastewater causing the greatest number of impairments under baseline conditions were pathogens, nutrients, and oxygen depletion. EPA estimated that 70 percent and 75 percent of all stream segments [38] of direct and indirect wastewater outfalls, respectively, are impaired for at least one pollutant found in MPP wastewater. EPA estimated that within these impaired stream segments, 63 percent and 5.83 percent of impacted river miles downstream of direct and indirect dischargers, respectively, would benefit from improved upstream water under Options 1 and 2. Because nutrient limits are included under Option 2 for indirect discharges, however, water quality improvements in these impaired catchments would likely be greater. Under proposed Option 3, 66 percent and 29 percent of stream segments downstream of directs and indirect dischargers, respectively, would benefit from decrease upstream pollutant loadings. EPA did not estimate the number of catchments that would no longer be considered impaired under each proposed rule option as impairment status may be dependent on many factors beyond the scope of this rulemaking.

2. Improvements to Vulnerable Species Habitats

EPA identified 108 unique vulnerable animal and insect species that have habitat located in watersheds potentially impacted by MPP wastewater discharge. Species groups included amphibians, birds, clams, crustaceans, fishes, insects, mammals, reptiles, and snails. Of these species, 26 percent were considered of lower vulnerability, 5 percent were moderately vulnerable, and 69 percent were found be of a high vulnerability status. EPA estimated that 88 percent and 90 percent of downstream waterbodies serving as habitat to these threatened and

[38] Within 25 river miles

endangered species could see water quality improvements compared to baseline conditions, under Options 1 or 2, and 3, respectively.

EPA's analysis indicated that MPP wastewater discharges to surface waters pose the greatest risk to *Quadrula cylindrica cylindrica*, also known as the Rabbitsfoot clam, which is considered threatened, with 358 stream miles of habitat impacted by MPP discharges. Under all three rule options, 15 of the 16 upstream MPP facilities would be required to adhere to new limits, and thus improve *Q. cylindrica* habitat in these reaches. EPA estimated that 29 percent of the stream segments that serve as habitat to threatened and/or endangered species are also impaired for at least one pollutant found in MPP wastewater. Nationally, EPA estimated that 75 species with a high vulnerability (69 percent) to change in water quality currently are found in watersheds that are impaired under baseline conditions, and that all of these watersheds may experience improvements in water quality under the proposed rule Options 2 and 3, and 98 percent under preferred Option 1.

3. Human Health Impact Improvements

Intentional or accidental consumption of water contaminated with pollutants such as pathogens and nitrate can cause health impacts in humans, ranging from gastrointestinal illness to thyroid disease. EPA estimated that implementation of the proposed rule options would result in improvements in source water quality to 121 drinking water service areas under Options 1 and 2, and 147 under Option 3. EPA also estimated the number of recreational areas that may experience improved water conditions under each rule option. For Options 1 or 2, and 3, 58 percent and 64 percent of recreational areas are expected to improve, respectively, the majority of which are classified as local parks.

Impacts to fisheries and fishing habitat are also of concern to human health as the consumption of contaminated shellfish can cause illness. Also, some individuals rely on subsistence fishing for survival and the reduction of fish populations due to compromised habitat can threaten their wellbeing. EPA estimated that 26 unique species used in commercial fishing may potentially be impacted by MPP wastewater release under baseline conditions, as well as 1 commercial oyster bed, and 9 recreational fishing areas. For preferred Option 1, 96 percent of all commercial fisheries, and 67 percent of recreational fishing areas, may benefit from improved water quality. These statistics are the same for Options 2 and 3 as this analysis currently reflects impacts from direct discharging facilities only. EPA plans to expand this analysis to include impacts to fishing areas from indirect MPP wastewater discharge to support any final rule.

XII. Benefits Analysis

This section summarizes EPA's estimates of the changes in national environmental benefits expected to result from changes in MPP facility wastewater discharges described in Section IX of this preamble, and the resultant environmental effects, summarized in Section XI of this preamble. The Benefit Cost Analysis (BCA) report provides additional details on the benefits methodologies and analyses.

A. Categories of Benefits Analyzed

Table XII-1 of this preamble summarizes benefit categories associated with the three regulatory options and notes which categories EPA was able to quantify and monetize. Analyzed benefits fall into four broad categories: (1) human health benefits from surface water quality improvements, (2) ecological conditions and effects on recreational use from surface water quality changes, (3) market and productivity benefits, and (4) air-related effects. Within these broad categories, EPA assessed the benefits associated with the regulatory options in this

proposal with varying degrees of completeness and rigor. Where possible, EPA quantified the expected changes in effects and estimated monetary values. However, data limitations, modeling limitations, and gaps in the understanding of how society values certain environmental changes prevented EPA from quantifying and/or monetizing some benefit categories. EPA notes that all human health and environmental improvements discussed in the EA also represent benefits of the proposal (whether quantified or unquantified), and the Agency will continue to enhance its benefits analysis methods where appropriate throughout the rulemaking process.

Table XII-1. Summary of Estimated Benefits Categories.

Category	Effect of Regulatory Options	Benefits Analysis		
		Quantified	Monetized	Qualitative Discussion
Human Health Benefits from Surface Water Quality Improvements				
Changes in incidence of adverse human health effects (*e.g.,* cases of gastrointestinal illness) from exposure to MPP pollutants via recreational use	Reduced exposure to *E. coli* and HAB-related illnesses from primary contact recreation and recreationally caught and consumed fish and shellfish			✓
Changes in incidence of adverse human health effects (*e.g.,* developmental effects, gastrointestinal illness, cancer) from exposure to MPP pollutants via drinking water	Reduced exposure to high nitrate concentrations, *E. coli*, and DBPs (which may be generated indirectly due to nutrient enrichment and eutrophication) in drinking water			✓
Ecological Condition and Recreational Use Effects from Surface Water Quality Changes				
Benefits from changes in surface water quality, including: aquatic and wildlife habitat[a], water-based recreation[a], aesthetic benefits[a], and nonuse values[a]	Improved ambient water quality in receiving and downstream reaches, resulting in: enhanced value of swimming, fishing, boating, and near-water activities from water quality changes; improved aesthetics from shifts in water clarity, color, odor, including nearby site amenities for residing,	✓	✓	✓

	working, and traveling; and Improved existence, option, and bequest values from improved ecosystem health			
Benefits from the protection of threatened and endangered species	Improved T&E species habitat and potential effects on T&E species populations	✓		✓
Market and Productivity Effects				
Changes in drinking water treatment costs	Improved quality of source water used for drinking			✓
Changes in wastewater treatment costs	Reduced wastewater treatment costs at POTWs			✓
Changes in the fees paid by MPP indirect dischargers to POTWs	Reduced (concentration-based) fees paid to POTWs by MPP indirect dischargers for discharges of TN, TP, BOD, and TSS			✓
Livestock watering	Improved quality of surface waters used for livestock watering			✓
Changes in commercial fishing yields	Improved fisheries yield and harvest quality due to aquatic habitat changes	✓		✓
Changes in subsistence harvesting yields	Improved fisheries yield and harvest quality due to aquatic habitat changes; Reduced risk of consuming contaminated fish and shellfish			✓
Changes in tourism and participation in water recreation	Changes in participation in water-based recreation, increases in visitation and purchases from supporting businesses.			✓
Changes in property values	Improved property values from changes in water quality			✓
Air Quality-Related Effects				
Changes in air emissions of $PM_{2.5}$	Changes in mortality and morbidity from exposure to particulate matter ($PM_{2.5}$) emitted directly or linked to changes in NO_X and SO_2 emissions (precursors to $PM_{2.5}$ and ozone)	✓	✓	✓
Changes in air emissions of NO_X and SO_2	Changes in ecosystem effects; visibility impairment; and human health effects from direct exposure to NO_x, SO_2, and hazardous air pollutants.	✓	✓	✓

Changes in air emissions of CO_2 and CH_4	Changes in climate change effects; Social cost of carbon and methane	✓	✓	✓
a. These values are implicit in the total WTP for water quality improvements.				
Source: Benefit Costs Analysis for Revisions to the Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point. USEPA. 2023.				

B. Quantification and Monetization of Benefits

1. Human Health Effects from Surface Water Quality Changes

Pollutants present in MPP wastewater discharges (e.g., pathogenic bacteria, nitrogen, and phosphorus) can cause a variety of adverse human health effects. The regulatory options affect human health risk by changing effluent discharges to surface waters and, as a result, reducing exposure to MPP pollutants in surface water via three exposure pathways: (1) primary contact recreation in waters affected by MPP discharges, (2) consumption of drinking water sourced from surface waters affected by MPP discharges, and (3) consumption of shellfish taken from waters affected by MPP discharges.

Due to data limitations and uncertainties, EPA was only able to monetize a subset of the health benefits associated with changes in pollutant discharges from MPP facilities resulting from the regulatory options in this proposal as compared to baseline. EPA anticipates monetizing benefits associated with a reduction in illness due to primary contact recreation for any final rule making. See the BCA, Chapter 3 and Appendix A for more details on the water quality index (WQI) used.

2. Ecological Condition and Recreational Use Effects from Changes in Surface Water Quality Improvements

EPA evaluated whether the regulatory options in this proposal would alter aquatic habitats and human welfare by changing concentrations of pollutants such as ammonia, nitrogen,

phosphorus, BOD, DO, fecal coliform bacteria, chlorides, and suspended sediment relative to baseline. As a result, the usability of some recreational waters relative to baseline discharge conditions could improve under each option, thereby affecting recreational users. Changes in pollutant loadings can also change the attractiveness of recreational waters by making recreational trips more or less enjoyable. The regulatory options may also change nonuse values stemming from bequest, altruism, and existence motivations. Individuals may value water quality maintenance, ecosystem protection, and healthy species populations independent of any use of those attributes.

EPA used a WQI to translate water quality measurements, gathered for multiple parameters that are indicative of various aspects of water quality, into a single numerical indicator that reflects achievement of quality consistent with the suitability for certain uses. The WQI included six parameters: DO, BOD, *E. coli*, total nitrogen, total phosphorus, and TSS. EPA modeled changes in all parameters, using modeled data for inputs for all parameters except *E. coli*, where monitoring data was used. Chapter 3 and Appendix A of the BCA discuss the WQI methodology in detail.

EPA estimated the change in monetized benefit values using an updated version of the meta-regressions of surface water valuation studies used in the benefit analyses of the 2015 (USEPA. 2015. EPA-821-R-15-005) and 2020 (USEPA. 2020. EPA-821-R-20-003) rules affecting the Steam Electric point source category. The meta-regressions quantify average household willingness to pay (WTP) for incremental improvements in surface water quality. Chapter 4 and Appendix B of the BCA provides additional detail on the valuation methodology.

Table XII-2 presents the main analysis results of WTP estimates, based on Model 1 of the meta regression analysis and using 3 percent and 7 percent discount rates (USEPA. 2020. EPA-

821-R-20-003). The total annualized values of water quality improvements from reducing nutrients, bacteria and pathogens, conventional pollutants, and other pollutants discharges from MPP facilities to affected HUC12s ranged from $0.52 million under Option 1 (7 percent discount rate) to $33 million under Option 3 (3 percent discount rate). These results represent only a limited regional assessment of benefits and do not reflect national water quality benefits. See the Benefit Cost Analysis for a more detailed explanation.

Table XII-2: Estimated Household and Total Annualized Willingness-to-Pay for Water Quality Improvements under the Regulatory Options Mid-Atlantic Region Only *(NOTE – Additional water quality modeling results and additional benefits to be completed Week of October 23)*

Proposed Regulatory Option	Affected Population (Millions)[a]	Average Annual WTP Per Person (2022$)[b]	Total Annualized WTP (Millions 2022$)[b,c]	
			3% Discount Rate	7% Discount Rate
Option 1	47.2	$0.01	$0.56	$0.52
Option 2	47.2	$0.39	$18.4	$17.4
Option 3	47.2	$0.70	$33.0	$31.1

b. Estimates based on Model 1, which provides EPA's main estimate of non-market benefits.

c. Estimated benefits are regional-level rather than national-level since water quality modeling was limited to the Mid-Atlantic Region.

Source: Benefit Cost Analysis for Revisions to the Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category. USEPA. 2023. B

3. Changes in Air Quality Related Effects

The proposed rule has the potential to affect air pollution through three main mechanisms: (1) Indirect changes in CO_2, NOx, SO_2, and $PM_{2.5}$ emissions associated with changes in electricity consumed to power wastewater treatment processes at MPP facilities and POTWs; (2) transportation-related air pollutant emissions (CO_2, NOx, and SO_2) due to changes in the trucking of solid waste for land application, landfilling, or composting; and (3) changes in

direct process-related emissions or capture of methane (CH_4) generated at MPP facilities and POTWs.

EPA evaluated potential effects resulting from net changes in air emissions of five pollutants: CO_2, CH_4, NOx, SO_2, and primary $PM_{2.5}$. CO_2 and CH_4 are key GHGs that EPA has determined endanger public health and welfare through their contribution to climate change. NOx and SO2 are precursors to fine particles sized 2.5 microns and smaller ($PM_{2.5}$), which are also emitted directly, and NOx is an ozone precursor. These air pollutants cause a variety of adverse health effects including premature death, nonfatal heart attacks, hospital admissions, emergency department visits, upper and lower respiratory symptoms, acute bronchitis, aggravated asthma, lost work and school days, and acute respiratory symptoms.

Table XII-3 of this preamble shows the changes in emissions of CO_2, CH_4, NOx, SO_2, and primary $PM_{2.5}$ under all proposed rule options relative to baseline. The proposed rule would result in a net increase in the emissions of CO_2, CH_4, NOx, and SO_2 under preferred Option 1. Emissions of these pollutants increase incrementally under both Options 2 and 3, with the most notable changes estimated for methane, NOx, and CO_2 emissions. These estimated increases in emissions are associated with changes in electricity consumption to power additional wastewater treatment processes; transportation-related air emissions due to changes in the trucking of solid waste for offsite land application, composting, and/or landfilling; and changes in direct process-related emissions.

Table XII-3 Estimated Changes in Air Pollution Emissions Under the Proposed Rule Options Incremental Increase from Baseline*

Proposed Regulatory Option	CO_2 (Tons/Year)	CH_4 (Tons/Year)	NO_X (Tons/Year)	SO_2 (Tons/Year)
Option 1	27,560	2.25	17.85	16.60
Option 2	100,890	8.30	63.26	61.21

Option 3	145,030	11.89	90.18	88.21

* Emissions are not additive between options

EPA followed the same methodology used in analyzing the revisions to the technology based ELGs for the steam electric generating point source category to monetize human health related impacts from changes in NOx, SO_2, and $PM_{2.5}$ emissions (USEPA. 2015. EPA-821-R-15-005). EPA used the *Emissions & Generation Resource Integrated Database* (eGRID) to estimate changes in the tons of NOx and SO_2 emissions associated with changes in electricity consumed at MPP facilities and POTWs (USEPA. 2023).[39] The eGRID database provides emission factors based on historical electricity generation (observed or estimated using 2021 data). It is designed to be used to estimate the emissions footprint of marginal changes in electricity consumption, assuming a constant generation mix. The Integrated Power Model (IPM) simulates future electricity generation (and associated emissions) to meet projected demand, given market, environmental, and other system constraints. Either approach can be used to estimate indirect emissions from electricity consumption. The eGRID database provides static emission factors, whereas the IPM can provide predicted changes in the profile of electricity generation.

EPA's use of EGRID values for the proposed rule analysis is conservative in that it would tend to overstate emissions associated with the increased power consumption to operate MPP wastewater treatment systems since emission factors are expected to decline in the coming decades (e.g., due to the 2022 IRA). For the final rule, EPA plans to account for these changes by using future emission factors derived using EPA's IPM model. EPA requests comment on using IPM results to estimate future emissions.

[39] USEPA. 2023. *Emissions & Generation Resource Integrated Database (eGRID)*. Retrieved from https://www.epa.gov/egrid

4. Other Quantified and/or Monetized Benefits

a) Benefits to Threatened and Endangered Species

To assess the potential for the rule to benefit threatened and endangered species (both aquatic and terrestrial) relative to the baseline, EPA analyzed the overlap between waters expected to see reductions in wildlife water quality criteria exceedance status under a particular option and the known critical habitat locations of high vulnerability threatened and endangered species. EPA examined the life history traits of potentially affected threatened and endangered species and categorized them by potential for population impacts due to surface water quality changes. Chapter 2 of the BCA and Chapter 4 of the EA provide additional detail on the methodology. EPA's analysis showed that there are 113 species whose known critical habitats overlap with surface waters downstream of facilities that may be affected by the proposed options. Of these species, 28 were considered to be of lower vulnerability status, 5 were considered moderate vulnerable, and 78 were consider highly vulnerable. Principal sources of uncertainty include the specifics of how changes under the regulatory options will impact threatened and endangered species, exact spatial distribution of the species, and additional species of concern not considered.

C. Total Monetized Benefits

Using the analysis approach described above, EPA estimated annualized benefits of the three regulatory options for all monetized categories. Table XII-5 and Table XII-6 of this preamble summarize the total annualized benefits using 3 percent and 7 percent discount rates, respectively. The preferred option (Option 1) has monetized benefits estimated at $90 million using a three percent discount rate and $85 million using a seven percent discount rate.

Table XII-5. Summary of Total Estimated Annualized Monetized Benefits at Three Percent (in millions, 2022$, at 2025)

Benefit Category [a]	Option 1	Option 2	Option 3
Human Health Effects from Water Quality Changes			
Change in gastrointestinal illness rates from pathogen exposure	A	A	A
Ecological Conditions and Recreational Use Changes			
Use and nonuse values for water quality improvements (for Mid-Atlantic Region only)	$95.6 + B	$166.1 + B	$208.4 + B
Market and Productivity Effects			
Changes in Drinking Water Treatment Costs	C	C	C
Air-Related Effects			
Changes in CO_2 and CH_4 air emissions	-$1.9	-$7.0	-$10.1
Changes in human health effects from Changes in NO_X and SO_2 emissions	-$3.5	-$12.9	-$18.6
Total	**$90+A+B+C**	**$146+A+B+C**	**$180+A+B+C**

[a] "A" represents unmonetized human health effects from water quality improvements. "B" represents the additional unquantified non-market water quality benefits. "C" represents the unmonetized market and productivity effects of improved water quality.

Table XII-6. Summary of Total Estimated Annualized Monetized Benefits at Seven Percent (in millions, 2022$, at 2025)

Benefit Category [a]	Option 1	Option 2	Option 3
Human Health Effects from Water Quality Changes			
Change in gastrointestinal illness rates from pathogen exposure	A	A	A
Ecological Conditions and Recreational Use Changes			
Use and nonuse values for water quality improvements (for Mid-Atlantic Region only)	$89.0 + B	$154.4 + B	$193.7 + B
Market and Productivity Effects			
Changes in Drinking Water Treatment Costs	C	C	C
Air-Related Effects			
Changes in CO_2 and CH_4 air emissions	-$1.9	-$7.0	-$10.1
Changes in human health effects from Changes in NO_X and SO_2 emissions	-$2.7	-$10.1	-$14.5
Total	**$85+A+B+C**	**$137+A+B+C**	**$179+A+B+C**

[a] "A" represents unmonetized human health effects from water quality improvements. "B" represents the additional unmonetized non-market water quality benefits. "C" represents the unmonetized market and

productivity effects of improved water quality.

D. Non-Monetized Benefits

The monetary value of the proposed rule's effects on social welfare does not account for all effects of the proposed options because, as described above, EPA is currently unable to quantify and/or monetize some categories. EPA anticipates the proposed rule Options would also generate important unquantified benefits, including but not limited to:

- Reduced incidence of adverse human health effects (e.g., developmental effects, gastrointestinal illness, cancer) from exposure to MPP pollutants via drinking water
- Protection of threatened and endangered species
- Reduction in wastewater treatment costs at some POTWs
- Changes in fees paid by some MPP indirect discharges based on concentration of conventional pollutants
- Improved quality of surface waters used for livestock watering
- Changes in fisheries yield and harvest due to aquatic habitat changes, impacting subsistence fishing populations as well as commercial fishing operations
- Changes in participation in water-based recreation
- Changes in property values from changes in water quality

The BCA Report discusses changes in these potentially important effects qualitatively, indicating their potential magnitude where possible. EPA will continue to seek to enhance its approaches to quantify and/or monetize a broader set of benefits for any final rule and solicits comment on monetizing some of these additional benefits categories.

XIII. Environmental Justice Impacts

Consistent with EPA's commitment to integrating environmental justice (EJ) in the Agency's actions, the Agency analyzed the distribution of impacts of this action across all potentially affected communities and sought input from stakeholders representing communities with potential EJ concerns. EPA prepared this analysis to implement the recommendations of the Agency's EJ Technical Guidance (USEPA. 2016).[40] For this ELG rulemaking, this analysis was conducted as part of the EA alongside other non-statutorily required analyses, such as water quality improvements, with the discussion of quantified benefits to specific communities and community groups included in the BCA. This analysis is intended to inform the public of the distributional effects of this proposal and the input EPA received from communities with potential EJ concerns. E.O. 12898 and E.O. 14096 are discussed in Section XVI.J of this preamble.

Overall, the analysis showed that communities near MPP facilities, surface waters downstream[41] of MPP wastewater discharge, those receiving drinking water from a potentially impacted service area, or potentially relying on subsistence fishing have greater proportions of low-income individuals and racial/ethnic minorities than the national average. Benefits associated with improvements to water quality resulting from pollutant reductions in surface water and drinking water are expected to accrue to low-income populations and some minorities

[40] USEPA. 2016. *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis.* https://www.epa.gov/environmentaljustice/technical-guidance-assessing-environmental-justice-regulatory-analysis

[41] Within 25 river miles

at a marginally higher rate when compared to all impacted communities under all proposed regulatory options.

A. Literature Review

EPA conducted a literature review to identify studies, data, and research describing the environmental and human health impacts of MPP facilities on low-income individuals and racial/ethnic minorities, focusing primarily on facility discharges of pollutants to water. EPA identified 21 papers published since 2005 that were relevant to this rule making. These sources suggested that MPP facilities are often located in rural areas with multiple large facilities in the same county or region, and that half of the communities surrounding slaughterhouses in the U.S. contain at least 30 percent of residents living below the poverty line, which is over twice the national average (Winders and Abrell. 2021)[42] (Burkhart et al. 2018).[43] The review also highlighted the ecological and health impacts of pollutant contamination of surface waters from MPP wastewater, such as elevated nitrogen discharge contributing to algal bloom occurrence and causing methemoglobinemia, or blue baby syndrome, in infants consuming drinking water with high nitrate levels (Environment America Center. 2020).[44] These findings suggest that wastewater discharge from MPP facilities differentially impacts various communities and population groups. EPA solicits comment on additional literature that discusses potential EJ

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[42] Winders, D. J., & Abrell, E. 2021. *Slaughterhouse Workers, Animals, and the Environment: The Need for a Rights-Centered Regulatory Framework in the United States That Recognizes Interconnected Interests.* Health and Human Rights Journal. Vol. 23: No. 2.

[43] Burkhart, K., Bernhardt, C., Pelton, T., Schaeffer, E., and Phillips, A. 2018. *Water Pollution from Slaughterhouses*. The Environmental Integrity Project. https://earthjustice.org/

[44] Environment America Center. 2020. *Slaughterhouses Are Polluting Our Waterways.* https://environmentamericacenter.org/sites/environment/files/reports/Slaughterhouse%20factsheet%20FINAL.pdf

concerns related to the specific changes being proposed to MPP wastewater discharges. For further discussion of the literature review, see Chapter 7 of the EA.

B. Proximity Analyses

EPA performed a set of proximity analyses using the EJSCREENBatch R package (USEPA. 2022)[45] to identify the environmental and socioeconomic characteristics of the communities that are expected to be impacted by discharges from MPP facilities via relevant exposure pathways.

First, EPA analyzed communities located within a 1-mile radius of an MPP facility using facility coordinates. EPA found that communities within 1 mile of an MPP facility have greater proportions of low-income individuals and individuals identifying as Asian, Black, and/or Hispanic than the national average. EPA also considered how these communities' exposure to relevant environmental indicators[46] of concern may change: PM 2.5, diesel PM, and traffic proximity.[47] These indicators all exceeded the national average, with traffic proximity in these communities more than double that of the average person.

[45] USEPA. March 2022. EJSCREENBatch. V2.0. Available online: https://github.com/USEPA/EJSCREENBatch

[46] Environmental indicator exposures were determined from raw indicator scores available in EJSCREEN V2.1. Each CBG score was population weighted before averaging across all communities. Environmental indicator score definitions are available in the EJSCREEN Technical Documentation (U.S. EPA. 2023. EJSCREEN Technical Documentation).

[47] EPA estimates that PM 2.5 will increase under Options 2 and 3 due to an increase in emissions from increased wastewater treatment. Diesel PM and traffic volume near facilities are predicted to rise as industrial sludge generation from treatment changes will increase under all proposed options, resulting in increased trucking for offsite land application. For further details on these estimates, refer to Section X of this document and the Section 6 of the EA.

Second, EPA examined the characteristics of communities located within a one-mile distance of a surface waterbody downstream of MPP facilities.[48] EPA found that communities downstream of MPP wastewater outfalls are on average exposed to higher P.M 2.5 levels and have a heighted proximity to traffic compared to national averages. These communities also have greater proportions of low-income individuals compared to the national average.

Lastly, EPA conducted an analysis of communities served by public water systems (PWSs) either with a source water intake within 25 miles downstream of an MPP wastewater outfall (direct PWS) or buying water from a direct PWS (buying PWS). Service areas were determined using a multi-tiered approach based on availability, first using service areas identified in the Hydroshare (SimpleLab, EPIC.2022),[49] then 2022 TIGER zip code tabulated areas, and finally county boundaries. Communities served by potentially impacted drinking water service areas have a greater proportion of individuals who identify as Black/African American when compared to the national average. This trend is most prominent in buying PWSs.

For additional detail on the proximity analysis and drinking water service area methodologies, and further results of the screening analysis, please refer to Chapter 7 of the EA.

C. Community Outreach

Due to the large number of potential communities with EJ concerns who could be affected, as identified in the results of the screening analysis, EPA used a wide-reaching approach to community engagement to maximize awareness of the rulemaking and the potential

[48] EPA defined downstream surface waterbodies as a segment 25 miles downstream of the initial common identifiers (COMIDs) identified for each direct discharge outfall.
[49] SimpleLab, EPIC. 2022. U.S. Community Water Systems Service Boundaries, v2.4.0, HydroShare, http://www.hydroshare.org/resource/20b908d73a784fc1a097a3b3f2b58bfb

impacts of proposed policy options. An overview of the rulemaking and its potential interest to communities was presented to the Office of Environmental Justice and External Civil Rights management team on May 30, 2023 to increase national awareness of the proposed rulemaking. This team includes EJ National Program and Regional managers, who engage directly with communities across the country. EPA also presented a rulemaking overview and held a discussion session with participants of the National Environmental Justice Community Engagement Call on June 20th, 2023, which had over 200 attendees.[50]

D. Distribution of Benefits

EPA evaluated the distribution of estimated benefits and costs of the proposed regulatory options across the affected population, with consideration of their distribution among communities with environmental justice concerns. Office of Management and Budget (OMB) Circular A-4, which provides guidance to agencies on the development of regulatory analyses as required under E.O. 12866, states that regulatory analyses "should provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern)."

To determine how benefits from pollutant reductions in MPP wastewater may be distributed among communities with environmental justice concerns, EPA calculated the population-weighted averages of these groups for impacted drinking water service areas and communities potentially reliant on subsistence fishing from surface waters downstream of MPP

[50] A recording of this meeting is available on the National Environmental Justice Community Engagement website through the "Previous Calls" link.

wastewater outfalls. EPA then compared these community characteristics to the subset of these populations who are expected to benefit under each proposed regulatory option.

1. Drinking Water Quality

EPA estimated that 7,595,010 people receive drinking water from a Public Water System (PWS) that either directly intakes source water from a surface water potentially impacted by MPP wastewater (direct) or from a PWS that buys drinking water from a direct PWS (buying). The population of these service areas (SAs) receiving potentially impacted drinking water has greater proportions of individuals identifying as Black/African American than the national average. Under all proposed regulatory options, drinking water benefits from improved source water are expected to accrue at a higher rate to low-income and Black/African American individuals. For Options 1 and 2, which impact the same direct discharging facilities and therefore the same service areas, 75.1 percent of the total receiving population would be impacted, 31.2 percent and 22.7 percent of which identify as low income and Black/African American, respectively. For Option 3, 82.7 percent of the total receiving population would be impacted, 30.5 percent and 22.1 percent of which identify as low income and Black/African American, respectively. For further discussion of changes in the distribution of drinking water benefits under proposed rule options, refer to Section 3 of Chapter 7 of the EA.

2. Fisher Population

EPA estimated that 13,244,292 people live within a 50-mile distance of a downstream surface water potentially impacted by MPP wastewater.[51] This population is representative of the group of people who may travel to these waterbodies for recreational or subsistence fishing opportunities. Communities in these areas have on average greater proportions of low-income individuals than the national average. Under all regulatory options, benefits from improved fish habitat are expected to accrue at a higher rate to low-income individuals, although a greater number of individuals would potentially benefit under Option 3. See Section 3 of Chapter 7 of the EA for a further discussion of these results.

E. Results of the Analysis

The results of EPA's screening analyses found that communities near MPP facilities, downstream surface waters, and those using impacted surface waters have greater proportions of low-income and/or racial/ethnic minorities than the national average. The results of EPA's distributional analysis of impacts suggested that improvements in drinking water quality and to fishing areas will differentially accrue to minority and/or low-income populations under all proposed regulatory options. Remaining exposures, impacts, costs, and benefits analyzed are small enough that EPA could not conclude whether changes in differential impacts would occur.

[51] Studies of fishers' behavior and practices have made similar observations (e.g., Sohngen, B., Zhang, W., Bruskotter, J., & Sheldon, B. 2015. *Results from a 2014 Survey of Lake Erie Anglers*. Columbus, OH: The Ohio State University, Department of Agricultural, Environmental and Development Economics and School of Environment & Natural Resources; Illinois-Indiana Sea Grant. 2018. *Lake Michigan Anglers Boost Local Illinois and Indiana Economies.*)

XIV. Development of Effluent Limitations and Standards

This section describes the statistical methodology used to calculate the long-term averages (LTAs), variability factors, and limitations for BAT, BPT, new source performance standards and pretreatment standards for existing and new sources. EPA's statistical methodology is well established and has been upheld by courts *Chemical Mfrs. Assn. v. EPA*, 877 F.2d 177, 211-12 (5th Cir. 1989). The methodology is based on LTA effluent values and variability factors that account for variation in treatment performance of the model technology. The LTAs, variability factors, and limitations were based upon pollutant concentrations collected from EPA sampling episodes, DMR data, data from State EPA offices, and data submitted by industry.

The proposed ELGs, collectively referred to in the remainder of this section as "limitations," for pollutants for each regulatory option, as presented in this preamble, are provided as "daily maximums" and "maximums for monthly averages." Definitions provided in 40 CFR 122.2 state that the daily maximum limitation is the "highest allowable 'daily discharge,'" and the maximum for monthly average limitation is the "highest allowable average of 'daily discharges' over a calendar month, calculated as the sum of all 'daily discharges' measured during a calendar month divided by the number of 'daily discharges' measured during that month." Daily discharges are defined to be the 'discharge of a pollutant' measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling."

EPA first determines an average performance level (the "long-term average") that a facility with well-designed and operated model technologies (which reflect the appropriate level of control) is capable of achieving. This LTA is calculated from the data from the facilities using

the BPT, BCT, and BAT technologies for the regulatory option. EPA uses all values and a lognormal distribution to calculate the facility LTA, which is then used in calculations for both limitations. EPA expects that all facilities subject to the limitations will design and operate their treatment systems to achieve the LTA performance level on a consistent basis because facilities with well-designed and operated BAT and BPT/BCT technologies have demonstrated that this can be done.

EPA then calculates the 99th percentile of daily measurements and the 95th percentile of monthly averages. The percentiles are chosen with the intention to accommodate reasonably anticipated variability within the control of the facility while also reflecting a level of performance consistent with the CWA requirement that these effluent limitations be based on the "best" available technologies. The daily maximum limitation is based on the 99th percentiles of the distribution of the daily measurements. The maximum monthly average limitation is based on the 95th percentile of the distribution of the monthly averages of the daily measurements and monthly averages. Using the LTA and the percentiles, EPA determines the daily and monthly "variability factors" (VFs), which are allowances for the variation in pollutant concentrations when processed through well designed and operated treatment systems. The allowance for variance incorporates all components of variability including process and wastewater generation, sample collection, shipping, storage, and analytical variability. If a facility operates its treatment system to meet the relevant LTA, EPA expects the facility to be able to meet the limitations. VFs assure that normal fluctuations in a facility's treatment are accounted for in the limitations. The daily VFs are calculated by dividing the 99th percentile of daily measurements by the corresponding LTA. The monthly VFs are calculated by dividing the 95th percentile of monthly measurements by the corresponding LTA.

EPA calculates LTAs and VFs for each facility with sufficient daily or monthly data. EPA then combines the LTAs and daily and monthly VFs across all facilities by calculating their median values.

To calculate the limitations, the LTAs are multiplied by the corresponding VFs. This ensures the limitations account for these reasonable excursions above the LTA. EPA's use of VFs results in limitations that are generally well above the actual LTA. For direct dischargers (BAT, BPT), EPA developed limits for total nitrogen, total phosphorus, *E. coli*, chlorides, and fecal coliform. For indirect dischargers (PSES, PSNS), EPA developed limits for oil and grease, BOD, TSS, total nitrogen, total phosphorus, and chlorides.

A. Criteria Used to Select Data as the Basis for the Limitations and Standards

In developing ELGs for any industry, EPA qualitatively reviews all the data before selecting data that represents proper operation of the technology that forms the basis for the limitations. EPA typically uses four criteria to assess the data. The first criterion requires that the facility have the BPT, BCT, or BAT treatment technology and demonstrate consistently diligent and optimal operation. Application of this criterion typically eliminates any facility with treatment other than the candidate technology. EPA generally determines whether a facility meets this criterion based upon site visits, discussions with facility management, and/or comparison to the characteristics, operation, and performance of treatment systems at other facilities. EPA often contacts facilities to determine whether data submitted were representative of normal operating conditions for the facility and equipment. As a result of this review, EPA typically excludes the data in developing the limitations when the facility has not optimized the performance of its treatment system to the degree that represents the appropriate level of control (*e.g.*, BPT, BCT, or BAT).

A second criterion generally requires that the influents and effluents from the treatment components represent typical wastewater from the industry, without incompatible wastewater from other sources. Application of this criterion results in EPA selecting those facilities where the commingled wastewaters did not result in substantial dilution, facilities without equalization where slug loads could result and cause frequent upsets and/or overloads, more concentrated wastewaters, or wastewaters with different types of pollutants than those generated by the waste stream for which EPA is proposing effluent limitations.

A third criterion typically ensures that the pollutants are present in the influent at sufficient concentrations to evaluate treatment effectiveness. To evaluate whether the data meet this criterion for inclusion as a basis of the limitations, EPA often uses the long-term average test (or LTA test) for facilities where EPA possesses paired influent and effluent data (see Section 13 of the TDD for details of the LTA test). The test measures the influent concentrations to ensure a pollutant is present at a sufficient concentration to evaluate treatment effectiveness. If a dataset for a pollutant fails the test (i.e., pollutant not present at a treatable concentration), EPA excludes the data for that pollutant at that plant when calculating the limitations.

A fourth criterion typically requires that the data are valid and appropriate for their intended use (e.g., the data must be analyzed with a sufficiently sensitive method). Also, EPA does not use data associated with periods of treatment upsets because these data would not reflect the performance from well-designed and well-operated treatment systems. In applying the fourth criterion, EPA may evaluate the pollutant concentrations, analytical methods and the associated quality control/quality assurance data, flow values, mass loading, plant logs, and other available information. As part of this evaluation, EPA reviews the process or treatment conditions that may have resulted in extreme values (high and low). As a consequence of this

review, EPA may exclude data associated with certain time periods or other data outliers that reflect poor performance or analytical anomalies by an otherwise well-operated site.

B. Data Selection for Each Technology

EPA used specific data sources to derive limitations for pollutants for wastewater streams resulting from MPP process wastewater and high chlorides processes. The LTAs, VFs, and limitations for each waste stream were based on pollutant concentrations collected during EPA sampling episodes, DMR data, data provided by EPA Regions and state agencies, and data submitted by industry. EPA conducted six sampling episodes. Industry discharge data includes data submitted in the MPP Questionnaire, data submitted by facilities upon request, and publicly available discharge monitoring reports.

EPA identified facilities that were operating the BAT technology for one or more of the proposed pollutants for regulation: total nitrogen, total phosphorus, *E. coli*, oil and grease, TSS, BOD, fecal coliforms. EPA calculated the BAT LTA for a given pollutant based on the facilities operating the BAT technology basis for that pollutant.

Limitations may be based on technology transferred from a different subcategory within an industry or from another industrial category. Limitations based on transfer of technology must be supported by a conclusion that the technology is indeed transferable and a reasonable prediction that it will be capable of meeting the prescribed effluent limits (*Tanners' Council of America v. Train*, 540 F.2nd 1188 (4th Cir. 1976)).

For the proposed limitations, EPA combined data sets across all MPP processes to give a single limit per analyte for the industry. As the raw materials for MPP processes are animals/animal products, composed of carbon, nitrogen, and phosphorus, EPA finds combining data from different MPP processes to be reasonable. Additionally, with the available data, EPA

performed a comparison of influent from the different MPP processes and found the wastewater characteristics to be comparable. Therefore, EPA proposes to find that the combination is reasonable and solicits data to inform this analysis.

Additional details on the data and methodology used to calculate the effluent limitations in today's proposal can be found in TDD Section 13. In addition, the proposed limitations for each level of control for the preferred Option 1 can be found in the proposed regulatory text following this preamble.

In addition to the proposed limitations, as described earlier EPA is soliciting comment on including effluent limitations for *E. coli* in addition to, or in place of, limitations for fecal coliform for direct discharging facilities. Based on data available to EPA at the time of proposal, the monthly average limitation for *E. coli* would be 9 MPN or CFU per 100 mL (see the TDD for additional information). EPA solicits comment on this value as well as the data and methodology used to calculate the proposed effluent limitations in today's proposal. EPA also solicits comment on including effluent limitations for chlorides, which are proposed as zero-discharge for high chlorides processes. In addition to general comments related to the calculation of proposed effluent limitations, EPA also solicits comment on combining data across subcategories in developing the proposed limitations. EPA also solicits additional daily and monthly data from facilities across the industry.

XV. Regulatory Implementation

A. Implementation of New Limitations and Standards

ELGs act as a primary mechanism to control the discharge of pollutants to waters of the United States. This proposed rule would be applied to MPP wastewater discharges through incorporation into NPDES permits issued by the EPA or states under CWA Section 402 (33

U.S.C. 1342) and through pretreatment program requirements under CWA Section 307 (33 U.S.C. 1317).

The Agency has developed the limitations and standards for this proposed rule to control the discharge of pollutants from the MPP point source category. Once promulgated, those permits or control mechanisms issued after this rule's effective date would be required to incorporate the effluent limitations guidelines and standards, as applicable. Also, under Section 510 of the CWA (33 U.S.C. 1370), states may require effluent limitations under state law as long as they are no less stringent than the requirements of a final rule. Finally, in addition to requiring application of the technology-based ELGs promulgated in a final rule, CWA Section 301(b)(1)(C) (33 U.S.C. 1311(b)(1)(C)) requires the permitting authority to impose more stringent effluent limitations on discharges as necessary to meet applicable water quality standards.

Categorical pretreatment standards for existing indirect dischargers, unlike effluent limitations guidelines applicable to direct dischargers, are directly enforceable and must specify a time for compliance not to exceed three years under CWA Section 307(b)(1) (33 U.S.C. 1317(b)(1)). Under EPA's General Pretreatment Regulations for Existing and New Sources (40 CFR 403), POTWs with flows in excess of 5 million gallons per day (MGD) must develop pretreatment programs meeting prescribed conditions. These POTWs have the legal authority to require compliance with applicable pretreatment standards and control the introduction of pollutants to the POTW through permits, orders, or similar means. POTWs with approved pretreatment programs act as the control authorities for their industrial users. Among the responsibilities of the control authority are the development of the specific discharge limitations for the POTW's industrial users. Because pollutant discharge limitations in categorical

pretreatment standards may be expressed as concentrations or mass limitations, in many cases, the control authority must convert the pretreatment standards to limitations applicable to a specific industrial user and then include these in POTW permits or another control instrument.

New source direct dischargers must comply with the new source performance standards (NSPS) of this rule when they commence discharging MPP process wastewater. CWA Section 306 (33 U.S.C. 1316) states that NSPS are effective upon promulgation. While arguably this language could mean that they are also enforceable upon promulgation, over the decades of CWA implementation, NSPS for direct dischargers have been implemented through NPDES permits. For facilities that are considered new sources, the CWA provides for a protection period from any more stringent technology-based standards. The protection period is generally 10 years from the completion of construction. See CWA Section 306(d) (33 U.S.C. 1316(d) and 40 CFR 122.29(d)). Thus, any source that commenced construction before promulgation of future NSPS will not be subject to any more stringent standard of performance until the protection period identified in 40 CFR 122.29(d) expires.

Facilities that discharge wastewater from operations from more than one category may need to comply with limitations and standards from multiple subcategories. For these facilities, permit writers would use the “building block approach” based on production or wastewater discharge flow to combine the sets of limitations into one final effluent limitation in the facility's permit. In cases where one part of the wastewater comes from operations with no national technology-based limitations, the permit writer must first establish BPJ limitations for this portion of the wastewater, and then combine these with any applicable national technology-based limitations using the building block approach. However, first processing subcategories (subcategories A, B, C, D, and K) are defined to include wastewater discharges from further

processing and rendering operations at the same facility. These facilities will only be regulated by the relevant first processing subcategory or subcategories.

In May 2000, EPA promulgated a regulation streamlining the NPDES regulations (*Amendments to Streamline the National Pollutant Discharge Elimination System Program Regulations: Round Two.* 65 FR 30886; May 15, 2000) which includes a monitoring waiver for direct dischargers subject to effluent guidelines. Direct discharge facilities may request a reduction in sampling a guideline-limited pollutant if that discharger "has demonstrated through sampling and other technical factors that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger" (65 FR 30908; 40 CFR 122.44). EPA noted in the preamble to the final NPDES streamlining rule that the Agency is granting a waiver from monitoring requirements but not a waiver from the limit. In addition, the provision does not waive monitoring for any pollutants for which there are limits based on water quality standards. The waiver for direct dischargers lasts for the term of the NPDES permit and is not available during the term of the first permit issued to a discharger. Any request for this waiver must be submitted with the application for a reissued permit or a request for modification of a reissued permit. On receiving authorization from their NPDES permitting authority, direct discharge facilities covered by any effluent guidelines (including any final rule promulgated for this category) may use the monitoring waiver contained in the NPDES streamlining final rule.

The CWA requires application of effluent limitations established pursuant to Section 301 or the pretreatment standards of Section 307 to all direct and indirect dischargers. However, the statute provides for the modification of these national requirements in a limited number of circumstances. The Agency has established administrative mechanisms to provide an opportunity

for relief from the application of the national effluent limitations guidelines for categories of existing sources for toxic, conventional, and nonconventional pollutants.

EPA may develop, with the concurrence of the state, effluent limitations or standards different from the otherwise applicable requirements for an individual existing discharger if it is fundamentally different with respect to factors considered in establishing the effluent limitations or standards applicable to the individual discharger. Such a modification is known as a Fundamentally Different Factor (FDF) variance. FDF variances are not available for new sources (*DuPont v. Train*, 430 U.S. 112 (1977)).

EPA, in its initial implementation of the effluent guidelines program, provided for the FDF modifications in regulations, which were variances from the BPT effluent limitations, BAT limitations for toxic and nonconventional pollutants, and BCT limitations for conventional pollutants for direct dischargers. FDF variances for toxic pollutants were challenged judicially and ultimately sustained by the Supreme Court in *Chemical Manufacturers Association* v. *Natural Resources Defense Council,* 470 U.S. 116, 124 (1985).

Subsequently, in the Water Quality Act of 1987, Congress added a new section to the CWA—Section 301(n) (33 U.S.C. 1311(n)). This provision explicitly authorizes modifications of the otherwise applicable BAT effluent limitations, if a discharger is fundamentally different with respect to the factors specified in CWA Section 304 (other than cost) from those considered by EPA in establishing the effluent limitations. CWA Section 301(n) also defined the conditions under which EPA may establish alternative requirements. Under Section 301(n), an application for approval of a FDF variance must be based solely on (1) information submitted during rulemaking raising the factors that are fundamentally different or (2) information the applicant did not have a reasonable opportunity to submit during the rulemaking. The alternate limitation

must be no less stringent than justified by the difference and must not result in markedly more adverse non-water quality environmental impacts than the national limitation.

EPA regulations further detail the substantive criteria used to evaluate FDF variance requests for direct dischargers. 40 CFR 125.31(d) and 40 CFR 403.13(d) identify six factors (e.g., volume of process wastewater, age and size of a discharger's facility) that may be considered in determining if a discharger is fundamentally different. The Agency must determine whether, based on one or more of these factors, the discharger in question is fundamentally different from the dischargers and factors considered by EPA in developing the nationally applicable effluent guidelines. The regulation also lists four other factors (e.g., inability to install equipment within the time allowed or a discharger's ability to pay) that may not provide a basis for an FDF variance. In addition, under 40 CFR 125.31(c), a request for limitations less stringent than the national limitation may be approved only if compliance with the national limitations would result in either (a) a removal cost wholly out of proportion to the removal cost considered during development of the national limitations, or (b) a non-water quality environmental impact (including energy requirements) fundamentally more adverse than the impact considered during development of the national limits. The legislative history of Section 301(n) underscores the necessity for the FDF variance applicant to establish eligibility for the variance. EPA's regulations at 40 CFR 125.32(b) and 403.13 impose this burden upon the applicant. The applicant must show that the factors relating to the discharge controlled by the applicant's permit that are claimed to be fundamentally different are, in fact, fundamentally different from those factors considered by EPA in establishing the applicable guidelines. In practice, very few FDF variances have been granted for past ELGs.

CWA Section 301(c) (33 U.S.C. 1311(c)) authorizes a variance from the otherwise applicable BAT effluent guidelines for nonconventional pollutants due to economic factors. The request for a variance from effluent limitations developed from BAT guidelines must normally be filed by the discharger during the public notice period for the draft permit. 40 CFR 122.21(m)(2) specifies that Section 301(c) variances must be filed within 270 days of promulgation of an ELG. Specific guidance for this type of variance is provided in *Draft Guidance for Application and Review of Section 301(c) Variance Requests* (USEPA. 1984).[52]

CWA Section 307(b)(1) (33 U.S.C. 1317(b)) establishes a discretionary program for POTWs to grant "removal credits" to their indirect dischargers. Removal credits are a regulatory mechanism by which industrial users may discharge a pollutant in quantities that exceed what would otherwise be allowed under an applicable categorical pretreatment standard because it has been determined that the POTW to which the industrial user discharges consistently treats the pollutant. EPA has promulgated removal credit regulations as part of its pretreatment regulations (40 CFR 403.7). These regulations provide that a POTW may give removal credits if prescribed requirements are met. The POTW must apply to and receive authorization from the Approval Authority. To obtain authorization, the POTW must demonstrate consistent removal of the pollutant for which approval authority is sought. Furthermore, the POTW must have an approved pretreatment program. Finally, the POTW must demonstrate that granting removal credits will not cause the POTW to violate applicable federal, state, or local sewage sludge requirements or the POTW's NPDES permit limits and conditions (40 CFR 403.7(a)(3)).

[52] https://www3.epa.gov/npdes/pubs/OWM0469.pdf

The United States Court of Appeals for the Third Circuit interpreted the CWA as requiring EPA to promulgate the comprehensive sewage sludge regulations pursuant to CWA Section 405(d)(2)(A)(ii) (33 U.S.C. 1345(d)(2)(A)(ii)) before any removal credits could be authorized *(NRDC* v. *EPA,* 790 F.2d 289, 292 (3d Cir., 1986); cert. denied., 479 U.S. 1084 (1987)). Congress made this explicit in the Water Quality Act of 1987, which provided that EPA could not authorize any removal credits until it issued the sewage sludge use and disposal regulations. On February 19, 1993, EPA promulgated *Standards for the Use or Disposal of Sewage Sludge*, which are codified at 40 CFR 503. EPA interprets the Court's decision in *NRDC* v. *EPA* as only allowing removal credits for a pollutant if EPA has either regulated the pollutant in Part 503 or established a concentration of the pollutant in sewage sludge below which public health and the environment are protected when sewage sludge is used or disposed.

The Part 503 sewage sludge regulations allow four options for sewage sludge disposal: (1) land application for beneficial use, (2) placement on a surface disposal unit, (3) firing in a sewage sludge incinerator, and (4) disposal in a landfill which complies with the municipal solid waste landfill criteria in Section 503.4. Because pollutants in sewage sludge are regulated differently depending upon the use or disposal method selected, under EPA's pretreatment regulations the availability of a removal credit for a particular pollutant is linked to the POTW's method of using or disposing of its sewage sludge. The regulations provide that removal credits may be potentially available for the following pollutants:

(1) If POTW applies its sewage sludge to the land for beneficial uses, disposes of it in a surface disposal unit, or incinerates it in a sewage sludge incinerator, removal credits may be available for the pollutants for which EPA has established limits in 40 CFR 503. EPA has set ceiling limitations for nine metals in sludge that is land applied, three metals in sludge that is

placed on a surface disposal unit, and seven metals and 57 organic pollutants in sludge that is incinerated in a sewage sludge incinerator.

(2) Additional removal credits may be available for sewage sludge that is land applied, placed in a surface disposal unit, or incinerated in a sewage sludge incinerator, so long as the concentration of these pollutants in sludge do not exceed concentration levels established in Part 403, Appendix G, Table II. For sewage sludge that is land applied, removal credits may be available for an additional two metals and 14 organic pollutants. For sewage sludge that is placed on a surface disposal unit, removal credits may be available for an additional seven metals and 13 organic pollutants. For sewage sludge that is incinerated in a sewage sludge incinerator, removal credits may be available for three other metals (40 CFR 403.7(a)(3)(iv)(B)).

(3) When a POTW disposes of its sewage sludge in a municipal solid waste landfill that meets the criteria of 40 CFR 258, removal credits may be available for any pollutant in the POTW's sewage sludge (40 CFR Part 403.7(a)(3)(iv)(C)).

B. Reporting and Recordkeeping Requirements

The proposed effluent limitations include pollutants not previously regulated in ELGs for direct and indirect MPP dischargers. NPDES permit writers and pretreatment control authorities must establish requirements for regulated MPP facilities to monitor their effluent to ensure that they are complying with the effluent limitations and pretreatment standards. As specified at 40 CFR 122.41, 122.44, and 122.48, all NPDES permits must specify requirements for using, maintaining, and installing (if appropriate) monitoring equipment; monitoring type, intervals, and frequencies that will provide representative data; analytical methods; and reporting and recordkeeping. In addition, 40 CFR 122.42 outlines additional conditions applicable to specified categories of NPDES permits. For example, during the NPDES permit cycle, POTWs must

provide adequate notice to the permitting authority of any new introduction of pollutants into the POTW from an indirect discharger which otherwise would be subject to CWA Section 301 or 306 if it were directly discharging those pollutants; any substantial change in the volume or character of pollutants being introduced into the POTW; and any anticipated impact to the POTW final discharge (40 CFR 142.2(b)).

The NPDES program requires permittees (with certain specific exceptions) to monitor for limited pollutants and report data at least once a year. 40 CFR 122.44(i)(2). Industrial users and POTWs have similar reporting requirements as specified at 40 CFR 403.12. The general pretreatment regulations at 40 CFR 403 require significant industrial users (which includes all industrial users subject to Categorical Pretreatment Standards, with certain specific exceptions) to monitor for limited pollutants and report data in June and December, unless required more frequently in the Pretreatment Standard or by the control authority or approval authority (40 CFR 403.12(e)). POTW control authorities are also required by 40 CFR 403.8(f) to conduct annual inspections and sampling to independently assess compliance with standards.

EPA does not plan to promulgate specific monitoring requirements or monitoring frequencies in the MPP rule. Therefore, NPDES permit writers may establish monitoring requirements and monitoring frequencies at their discretion subject to the requirements of the NPDES regulations. Likewise, the control authority for indirect dischargers may establish monitoring requirements and monitoring frequencies at their discretion subject to the requirements of the pretreatment program regulations and in compliance with approved state and POTW program procedures. The Agency notes, however, that since the PRA requires it to estimate the incremental reporting and recordkeeping burden associated with any new regulation, in developing the proposed Part 432 limitations it considered a monthly sampling frequency for

purposes of estimating this burden. EPA expects that facilities properly operating and maintaining the wastewater treatment technology system will be able to comply with the monthly average limitation/standard when they sample at the assumed monthly monitoring frequency, although compliance is required regardless of the number of samples analyzed and averaged in a month. EPA recommends that permitting authorities require monitoring samples at some regular, predetermined frequency. If a facility has difficulty complying with the standards on an ongoing basis, the facility should improve its equipment, operations, and/or maintenance.

Facilities are required to use analytical methods specified in or approved under 40 CFR 136 for compliance monitoring (40 CFR 122.41(j)(4), 403.12(g)(3)). Of note, Part 136 requires facilities to collect grab samples for oil & grease. In developing the Part 432 oil & grease limitations, EPA generally collected six grab samples in a 24-hour monitoring day. For pH, sample types can range from a one-time grab sample during a monitoring day to continuous sampling throughout a monitoring day where pH is a critical aspect of the wastewater treated or the wastewater treatment operation.

C. Applicability of PSNS/NSPS Requirements

In 2004, EPA promulgated NSPS/PSNS for certain discharges from new units. Regardless of the outcome of the current rulemaking, those units that are currently subject to the 2004 NSPS/PSNS will continue to be subject to such standards. In addition, EPA is proposing to clarify in the text of the regulation that, assuming the Agency promulgates BAT/PSES requirements as part of the current rulemaking, units to which the 2004 NSPS/PSNS apply will also be subject to any newly promulgated BAT/PSES requirements because they will be existing sources with respect to such new requirements.

XVI. Related Acts of Congress, E.O's and Agency Initiatives

Additional information about these statutes and Executive Orders can be found at https://www.epa.gov/laws-regulations/laws-and-executive-orders.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is a "significant regulatory action", as defined under section 3(f)(1) of E.O. 12866, as amended by E.O. 14094. Accordingly, EPA submitted this action to OMB for E.O. 12866 review. Documentation of any changes made in response to the E.O. 12866 review is available in the docket. The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, "Benefit and Cost Analysis for Proposed Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category" EPA 821-R-23-013, is also available in the docket and is briefly summarized in Section VIII.

B. Paperwork Reduction Act

The information collection activities in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2701.02. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

This Information Collection Request (ICR) seeks approval of the information requirements in the Proposed Rule for the Effluent Guidelines and Standards for the Meat and Poultry Products (MPP) Category. EPA is proposing revisions to Best Available Technology Economically Achievable (BAT), as well as new Pretreatment Standards for Existing Sources (PSES) and Pretreatment Standards for New Sources (PSNS) under the Clean Water Act (CWA)

for MPP facilities. Under the proposed BAT, certain MPP facilities that discharge wastewater directly to waters of the U.S. would be required to monitor for additional pollutants, such as phosphorus. Under the proposed PSES/PSNS, certain MPP facilities that discharge wastewater into publicly owned treatment works (POTWs) would be required to control the discharge of conventional pollutants. The proposed rule would require all affected direct discharging MPP facilities to meet limits for nitrogen, and phosphorus before discharging wastewater to surface waters. These facilities are already required to monitor for nitrogen. The proposed rule would require all affected indirect MPP facilities to meet limits for biological oxygen demand (BOD), oil and grease, and total suspended solids (TSS) before discharging wastewater to POTWs through the use of wastewater treatment technologies and Best Management Practices (BMPs).

The users of the data would be MPP facilities, state and local regulatory authorities, EPA, and, perhaps most importantly, the general public. Specifically for indirect dischargers, the users of the data would be MPP facilities and their Control Authorities. By establishing categorical pretreatment standards for the MPP category in 40 CFR Part 432, MPP dischargers to POTWs would become subject to certain reporting requirements in 40 CFR Part 403. These include a requirement to submit a baseline monitoring report, 90-day compliance report and on-going monitoring and reporting requirements including results of discharge sampling. Reports submitted to the Permitting or Control Authority may contain confidential business information. However, EPA does not consider the specific information being requested by the rule to be typical of confidential business or personal information. If a respondent does consider this information to be of a confidential nature, the respondent may request that such information be treated as such. All confidential data will be handled in accordance with 40 CFR 122.7, 40 CFR Part 2, and EPA's Security Manual Part III, Chapter 9, dated August 9, 1976.

Respondents/affected entities: Entities affected by this information collection request are Meat and Poultry Products facilities and Control Authorities.

The Meat and Poultry Products (MPP) point source category includes facilities "engaged in the slaughtering, dressing and packing of meat and poultry products for human consumption and/or animal food and feeds. Meat and poultry products for human consumption include meat and poultry from cattle, hogs, sheep, chickens, turkeys, ducks and other fowl as well as sausages, luncheon meats and cured, smoked or canned or other prepared meat and poultry products from purchased carcasses and other materials. Meat and poultry products for animal food and feeds include animal oils, meat meal and facilities that render grease and tallow from animal fat, bones and meat scraps" (See 40 CFR 432.1).

Control Authorities have regulatory oversight for pollutant discharges to POTWs. The "Control Authority" refers to the POTW if the POTW has an approved pretreatment program, or the Approval Authority if it has not been approved, which may be the State or EPA. By establishing categorical pretreatment standards for the MPP category, control authorities would be subject to certain oversight requirements in 40 CFR Part 403.

Respondent's obligation to respond: Mandatory (40 CFR Parts 122.41, 122.44 and 122.48, 403, and 432.)

Estimated number of respondents: 485 meat and poultry product facilities and 360 control authorities

Frequency of response: EPA is assuming a one-time burden per facility to develop baseline and 90-day compliance reports and review production as well as monthly data reporting.

Total estimated burden: 15,133 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $2,981,260 (per year), includes $1,339,530 annualized capital or operation & maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. The EPA will respond to any ICR-related comments in the final rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs using the interface at www.reginfo.gov/public/do/PRAMain. Find this particular information collection by selecting "Currently under Review - Open for Public Comments" or by using the search function. OMB must receive comments no later than [insert date 30 days after publication in the *Federal Register*.

C. Regulatory Flexibility Act

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are meat and poultry products facilities that engage in meat and/or poultry slaughter, further processing, and/or rendering. The proposed rule would not affect any current small governmental jurisdictions or not-for-profit organizations. Only facilities that exceed the subcategory-specific production thresholds would be subject to this rule. The Agency has determined that under the proposed Option 1, of the estimated 3,233 small businesses that own MPP facilities, 96 small entities may experience an impact. Of the 96 potentially regulated small

entities, no entities are estimated to incur annualized post-tax compliance costs greater than 3 percent of revenues; only one entity is estimated to incur compliance costs between 1 to 3 percent of revenues; 95 small entities are estimated to incur compliance costs of less than 1 percent of revenues. Under the most stringent option (Option 3), 263 small entities may experience an impact: 4 entities are estimated to incur costs greater than 3 percent of revenues, 11 entities between 1 to 3 percent, and 248 less than 1 percent. These results are summarized in Table XVI-2, below (same as Table VIII-12). Details of this analysis are presented in Section VIII and the RIA found in the docket.

Table 0-1 Small Firm-Level CTR Screening Analysis Results

Entity Type	Total # of Small Firms	Number Small Firms with a Ratio of				Percent of Small Firms with a Ratio of			
		0%[a]	> 0 and <1%	≥1 and <3%	≥3%	0%[a]	> 0 and <1%	≥1 and <3%	≥3%
Option 1	3,233	3,137	95	1	0	97%	3%	0.0%	0.0%
Option 2	3,233	3,137	94	1	1	97%	3%	0.0%	0.0%
Option 3	3,233	2,970	248	11	4	92%	8%	0.0%	0.0%
a. These entities own only facilities that already meet discharge requirements for the wastestreams addressed by a given regulatory option and are therefore not estimated to incur any compliance technology costs.									

Although this proposed rule would not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this proposed rule on small entities. The proposed rule includes subcategory-specific production thresholds that would have less stringent effluent limitations for smaller production facilities. Facilities under certain production thresholds may have no national effluent limitations.

Although not required by the RFA to convene a Small Business Advocacy Review (SBAR) Panel because the EPA has now determined that this proposal would not have a significant economic impact on a substantial number of small entities, the EPA originally

convened a panel to obtain advice and recommendations from small entity representatives potentially subject to this rule's requirements. The 5 panel recommendations are briefly summarized here, and a copy of the SBAR Panel Report is included in the docket for this rulemaking (USEPA. 2023. DCN MP00347). The Panel recommended EPA: (1) Exclude small and very small firms from regulation and take public comment on production thresholds so as not to cause substantial economic hardship on small entities; (2) Set regulations based on wastewater flows as an alternative to production thresholds; (3) Consider and take comment on a longer or flexible timeline for small entities to meet proposed regulations; (4) Consider and take comment on conditional limits for MPP facilities that discharge to POTWs that already have nitrogen and phosphorus treatment capabilities equivalent to the proposed rule in place; (5) Publish compliance guides to help facilities determine rule applicability and requirements and to take comment on what information would be beneficial for small entities.

Although not required by the RFA, the EPA prepared an initial regulatory flexibility analysis (IRFA) that examines the impact of the proposed rule on small entities along with regulatory alternatives that could minimize that impact. The IRFA describes why this action is being considered, the objectives and legal basis for the proposed rule, the small entities to which the proposed rule applies, the compliance requirements, other relevant Federal rules, potential economic impacts on small entities, how regulatory options developed by EPA served to mitigate the impact of the regulatory options on small entities, and uncertainties and limitations. The complete IRFA is available for review in the docket.

In accordance with RFA requirements and as it has consistently done in developing effluent limitations guidelines and standards, EPA subsequently assessed whether the proposed regulatory options would have "a significant impact on a substantial number of small entities"

(SISNOSE). EPA performed this assessment for each of the proposed options and as described above certified no SISNOSE.

D. Unfunded Mandates Reform Act

This action contains a federal mandate under UMRA, 2 U.S.C. 1531–1538, that may result in expenditures of $100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any one year. Accordingly, the EPA has prepared a written statement required under section 202 of UMRA. The statement is included in the docket for this action and briefly summarized here.

An industrial user (IU) is a nondomestic source of indirect discharge into a POTW, and in this rule is the meat and poultry products facility discharger. The Control Authority may be the POTW, the state, or EPA, depending on whether the POTW or the state is approved by EPA to administer the pretreatment program. The Control Authority is the POTW in cases where the POTW has an approved pretreatment program. The Control Authority is the state, where the POTW has not been approved to administer the pretreatment program, but the state has been approved. The Control Authority is EPA where neither the POTW nor the state have been approved to administer the pretreatment program. The Approval Authority is the State (Director) in an NPDES authorized state with an approved pretreatment program, the EPA regional administrator in a non-NPDES authorized state, or NPDES state without an approved state pretreatment program.

Typically, an IU is responsible for demonstrating compliance with pretreatment standards by performing self-monitoring, submitting reports and notifications to its Control Authority, and maintaining records of activities associated with its discharge to the POTW. The Control Authority is the regulating authority responsible for implementing and enforcing pretreatment

standards. The General Pretreatment Regulations require certain minimum oversight of IUs by Control Authorities. The required minimum oversight includes receipt and analysis of reports and notifications submitted by IUs, random sampling and analyzing effluent from IUs, and conducting surveillance activities to identify occasional and continuing noncompliance with pretreatment standards. The Control Authority is also responsible for taking enforcement action as necessary.

For IUs that are designated as Significant Industrial Users (SIUs),[53] Control Authorities must inspect and sample the SIU effluent annually, review the need for a slug control plan, and issue a permit or equivalent control mechanism. IUs subject to categorical pretreatment standards are referred to as Categorical Industrial Users (CIUs) and General Pretreatment Regulations define SIU to include CIUs.

The Approval Authority is responsible for ensuring that POTWs comply with all applicable pretreatment program requirements. Among other things, the Approval Authority receives annual pretreatment reports from the Control Authority. These reports must identify which IUs are CIUs. In accordance with 40 CFR 122.44(j)(1) all POTWs are required to "identify, in terms of character and volume of pollutants, any SIU" and include them on their NPDES Application form, 122.21(j)(6). Approved POTW Control Authorities have legal authority and procedures to identify and control such IUs (40 CFR 403.8(f)(1) & (2)). Therefore,

[53] SIUs are defined as Industrial Users subject to Categorical Pretreatment Standards, or those that: discharge an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW Treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standard. See 40 CFR Section 403.3 for details.

this proposed MPP rule requires little extra burden on Control Authorities to identify the subset of SIUs that are subject to categorical pretreatment standards and to apply the requirements to them.

This action is not subject to the requirements of Section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. E.O. 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. E.O. 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in EO 13175. It would not have substantial direct effects on tribal governments, on the relationship between the Federal Government and the Indian Tribes, or the distribution of power and responsibilities between the Federal Government and Indian Tribes as specified in E.O. 13175. EPA is not aware of any facility subject to these proposed ELGs that is owned by tribal governments. Thus, EO 13175 does not apply to this action.

Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, EPA consulted with tribal officials during the development of this action. EPA initiated consultation and coordination with federally recognized tribal governments in January 2023. EPA shared information about the Meat and Poultry Products effluent guidelines rulemaking (MPP ELG) with all federally recognized tribes by sending a letter and detailed plan describing the rulemaking, the potential impact to tribes, and opportunities for tribal involvement. EPA

performed a proximity-based screening analysis to determine which tribes and tribal lands are the most likely to be impacted by MPP industrial activity and/or changes to the MPP ELG. Tribes that were identified as being in proximity[54] to either 10 or more MPP facilities or a waterbody potentially impacted by MPP wastewater discharge[55], were notified of these screening results to promote awareness. EPA continued this government-to-government dialogue by hosting two identical listening sessions as webinars on February 6th and 13th, 2023, where tribal representatives were invited to participate in further discussions about the rulemaking process and objectives, with a focus on identifying specific ways the rulemaking may affect tribes. The consultation process ended on March 10th, 2023. No tribal governments requested direct government-to-government consultations, and EPA received no written comments from any tribes.

G. E.O. 13045: Protection of Children from Environmental Health Risks and Safety Risks

E.O. 13045 directs federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in federal health and safety standards and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives. This action is not subject to E.O. 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children.

EPA reviewed epidemiological studies to determine whether exposures to pollutants in MPP wastewater are associated with disproportionate health risks among children. EPA identified evidence of disproportionate health risks among children from exposure to nitrates,

[54] Within 5 miles.

[55] Within 50 miles of a 25-mile reach downstream of an MPP wastewater outfall.

which can result from the discharge of nitrogen from MPP facilities. Research has shown an association between exposure to nitrates in drinking water and increased incidence of birth defects and methemoglobinemia ("blue baby syndrome") in children (Fears. 2021)[56], (Baskin- [57] EPA analyzed changes in total nitrogen (TN) loadings from MPP facilities under the proposed regulation and found that the regulatory options all result in estimated reductions relative to the baseline in TN loadings into downstream receiving waters. Additionally, compared to the baseline, EPA found that modeled regulatory Option 3 resulted in reductions in average nitrate concentrations in all three case study watersheds. This result suggests that nitrate levels will decrease in source waters for intakes of drinking water systems downstream of MPP wastewater discharge. While reducing nitrogen species in source water may reduce the amount and cost of treatment needed, EPA does not anticipate changes in nitrate and nitrite concentrations in drinking water. This is because public water systems must meet the maximum contaminant level (MCL) in water for nitrates and nitrite (10 mg/L and 1 mg/L, respectively). These MCLs are equal to the Maximum Contaminant Level Goals (MCLGs) and were specifically based on levels considered low enough to protect infants from methemoglobinemia. The risk to children in households whose water supply comes from public water systems is therefore low. Because of this as well as data limitations, EPA did not quantify resulting changes in birth defects and

[56] Fears, Darryl. April 13, 2021. *A Poultry Plant, Years of Groundwater Contamination And, Finally, A Court Settlement*. The Washington Post.
[57]Leah Baskin-Graves, Haley Mullen, Aaron Aber, Jair Sinisterra, Kamran Ayub, Roxana Amaya-Fuentes, and Sacoby Wilson. 2019. *Rapid Health Impact Assessment of A Proposed Poultry Processing Plant in Millsboro, Delaware*. International Journal of Environmental Research and Public Health, Vol. 16, Issue 3429.

methemoglobinemia but expects children to benefit from a reduced risk of these health impacts from lower nitrogen concentrations in source waters.

Nutrient concentrations in private well water may be impacted by any increase in land application of sludges expected to occur under proposed rule options. Because land application locations and frequencies change over time, EPA was not able to estimate potential impacts of this rulemaking on private well water quality, and therefore the health of children in affected households. Taken together, it is underdetermined how children may be impacted under the implementation of this rule.

H. E.O. 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not a significant energy action under E.O. 13211, because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. As discussed in Section X, EPA estimates that compliance with this proposed rule would create a small increase in nationwide energy consumption for MPP facilities. EPA estimates an approximate increase of 104,208 MWh per year for wastewater treatment. By comparison, electric power generation facilities generated 4,108 billion megawatt hours of electric power in the United States in 2021 (EIA. 2021).[58] Additional energy requirements for EPA's selected options are acceptable (i.e., significantly less than 0.001 percent of national requirements).

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. E.O. 12898: Federal Actions to Address Environmental Justice in Minority

[58] U.S. Energy Information Administration. 2021. *Electric Power Annual Report*. www.eia.gov/electricity/annual

Populations and Low-Income Populations; Executive Order 14096 Revitalizing Our Nation's Commitment to Environmental Justice for All

The EPA believes that the human health or environmental conditions that exist prior to this action result in or have the potential to result in disproportionate and adverse human health or environmental effects on communities with environmental justice (EJ) concerns. Literature on the MPP industry showed that facilities are commonly (Winders and Abrell. 2021)[59] in rural areas, often with multiple large facilities located in the same county (Burkhart et al. 2018).[60] Exposure to pollutants released by facilities through air, water, and solid waste (Baskin-Graves et al. 2019) cause health effects in communities near or downstream of facilities (Hall et al. 2021)[61] near MPP facilities have been documented to have greater proportions of vulnerable population groups and potential exposures to environmental stressors than the average community. The results of EPA's proximity analysis support this finding. EPA determined that Census block groups (CBGs) located within one mile of an MPP facility had larger proportions of people identifying as Asian, Black, and or Hispanic, and more low-income individuals than the national average.[62] Relevant indicators of pollution exposures expected to be impacted under

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[59] Winders, D. J., & Abrell, E. 2021. *Slaughterhouse Workers, Animals, and the Environment: The Need for a Rights-Centered Regulatory Framework in the United States That Recognizes Interconnected Interests*. Health and Human Rights Journal. Vol. 23: No. 2.

[60] Burkhart, K., Bernhardt, C., Pelton, T., Schaeffer, E., and Phillips, A. 2018. *Water Pollution from Slaughterhouses.* The Environmental Integrity Project. https://earthjustice.org/

[61] Hall, J., Galarraga, J., Berman, I., Edwards, C., Khanjar, N., Kavi, L., Murray, R., Burwell-Naney, K., Jiang, C., & Wilson, S. 2021. *Environmental injustice and industrial chicken farming in Maryland.* International Journal of Environmental Research and Public Health, 18(21). https://doi.org/10.3390/ijerph182111039.

[62] The national average of people identifying as Asian, Black, and/or Hispanic are 5.6, 12.2, and 18.4 percent, respectively, and is 29.8 percent for individuals considered to be of low-income status. (ACS 2017-2021).

proposed rule options ($PM_{2.5}$, diesel PM, and traffic proximity) also exceeded the 50th percentile nationally on average for these communities. EPA also assessed community demographics along downstream receiving waters[63] of MPP facilities and areas served by public drinking water systems sourcing water from receiving waters. These analyses showed that CBGs served by impacted drinking water systems have greater proportions of Black/African American people than the national average, while CBGs within one mile of a downstream receiving waters have a larger proportion of low-income individuals than the national average.[64] EPA believes that this action is likely to reduce existing disproportionate and adverse effects on communities with environmental justice concerns. Under all proposed regulatory options, the extent of MPP discharge impacts on drinking water sources decreases compared to the baseline, therefore reducing impacts to these drinking water distribution systems and the people served by them. The drinking water systems predicted to have improved intake water quality under the regulatory options evaluated serve an increasing fraction of the population identifying as Black/African American relative to baseline under preferred option 1 and option 2, but a decreasing fraction under option 3. However, this percentage exceeds the national average under all options. Additionally, low-income individuals differentially benefit from improved drinking water resources under all regulatory options evaluated. When considering other analyses, such as the distribution of impacts to communities fishing in downstream receiving waters, the regulatory options do not create disproportionate or adverse effects relative to the baseline. For information regarding the distribution of anticipated benefits and a discussion of outreach and public

[63] Within 25 river miles of an MPP process wastewater outfall.
[64] National averages are derived from the five-year 2017-2021 American Community Survey.

engagement efforts, refer to Section XIII of this preamble. The information supporting this Executive Order review is contained in Section 7 of the Environmental Assessment document, which is available in the public docket.

Appendix A to the Preamble: Definitions, Acronyms, and Abbreviations Used in This Preamble

The following acronyms, abbreviations, and terms are used in this preamble. These terms are provided for convenience to the reader, and they are not regulatory definitions with the force or effect of law, nor are they to be used as guidance for implementation of this proposed rule.

Administrator. The Administrator of the U.S. Environmental Protection Agency.

Agency. U.S. Environmental Protection Agency.

BAT. Best Available Technology economically achievable, as defined by CWA Sections 301(b)(2)(A) and 304(b)(2)(B).

BCA. Benefit Cost Analysis.

BCT. The best control technology for conventional pollutants, applicable to discharges of conventional pollutants from existing industrial point sources, as defined by Section 304(b)(4) of the CWA.

Bioaccumulation. General term describing a process by which chemicals are taken up by an organism either directly from exposure to a contaminated medium or by consumption of food containing the chemical, resulting in a net accumulation of the chemical over time by the organism.

BMP. Best management practice.

BOD_5. Biological oxygen demand measured over a five-day period.

BPJ. Best Professional Judgement.

BPT. The best practicable control technology currently available, as defined by CWA Sections 301(b)(1) and 304(b)(1).

CBI. Confidential business information.

CFR. Code of Federal Regulations.

CWA. Clean Water Act; The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 *et seq.*), as amended, *e.g.,* by the Clean Water Act of 1977 (Pub. L. 95–217) and the Water Quality Act of 1987 (Pub. L. 100–4).

CWA Section 308 Questionnaire. A questionnaire sent to facilities under the authority of Section 308 of the CWA, which requests information to be used in the development of national effluent limitations guidelines and standards.

Conventional Pollutants. Section 304(a)(4) designates the following as conventional pollutants*:* biochemical oxygen demand, total suspended solids, fecal coliform, and pH, and any additional pollutants defined by the Administrator. The Administrator designated oil & grease as an additional conventional pollutant on July 30, 1979. 40 CFR 401.16.

DAF. Dissolved Air Flotation.

Daily Discharge. The discharge of a pollutant measured during any calendar day or any 24-hour period that reasonably represents a calendar day.

Denitrification. Nitrite and nitrate are reduced by heterotrophic bacteria into nitrogen gas in anaerobic conditions.

Direct discharge. (1) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or (2) any addition of any pollutant or combination of pollutant to waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from surface runoff that is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and

discharges through pipes, sewers, or other conveyances that lead into privately owned treatment works. This term does not include addition of pollutants by any "indirect discharger." 40 CFR 122.2.

DMR. Discharge Monitoring Report

Effluent limitation. Under CWA Section 502(11), any restriction, including schedules of compliance, established by a state or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents that are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean.

EJA. Environmental Justice Analysis

ELGs. Effluent limitations guidelines and standards.

E.O. Executive Order.

EPA. U.S. Environmental Protection Agency.

Existing Source. For this rule, any source that is not a new source as defined in 40 CFR 122.2.

Facility. Any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the CWA.

Finished Product. The final manufactured product produced on site, including products intended for consumption with no additional processing as well as products intended for further processing, when applicable.

First Processing. Operations which receive live meat animals or poultry and produce a raw, dressed meat or poultry product, either whole or in parts.

FTE. Full Time Equivalent Employee

Further Processing. Operations which utilize whole carcasses or cut-up meat or poultry products for the production of fresh or frozen products, and may include the following types of processing: cutting and deboning, cooking, seasoning, smoking, canning, grinding, chopping, dicing, forming or breading.

Groundwater. Water that is found in the saturated part of the ground underneath the land surface.

Hazardous Waste. Any waste, including wastewater, defined as hazardous under RCRA, CERCLA, TSCA, or any State law.

HEM. A measure of oil & grease in wastewater by mixing the wastewater with hexane and measuring the oils and greases that are removed from the wastewater with n-hexane. Specifically, EPA Method 1664, see, Table IB.

Indirect discharge. Wastewater discharged or otherwise introduced to a POTW.

Landfill. A disposal facility or part of a facility or plant where solid waste, sludges, or other process residuals are placed in or on any natural or manmade formation in the earth for disposal and which is not a storage pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome or salt bed formation, an underground mine, a cave, or a corrective action management unit.

LTA (Long-Term Average). For purposes of the effluent guidelines, average pollutant levels achieved over a period of time by a facility, subcategory, or technology option. LTAs were used in developing the effluent limitations guidelines and standards in today's proposed regulation.

Live Weight Killed (LWK). The total weight of the total number of animals slaughtered during a specific time period.

Maximum Monthly Discharge Limitation. The highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during the calendar month divided by the number of "daily discharges" measured during the month.

Meat. The term "meat" includes all animal products from cattle, calves, hogs, sheep, lambs, horses, goats and exotic livestock (*e.g.*, elk, buffalo, deer) etc., except those defined as Poultry for human consumption. This category may include certain species not classified as "meat" by USDA FSIS and that may or may not be under USDA FSIS voluntary inspection.

MPP. Meat and Poultry Products.

Minimum Level. The level at which an analytical system gives recognizable signals and an acceptable calibration point.

Mortality. Death rate or proportion of deaths in a population.

NAICS. North American Industry Classification System.

Non-Conventional Pollutants. Pollutants that are neither conventional pollutants nor toxic/priority pollutants.

Non-Water Quality Environmental Impact. Deleterious aspects of control and treatment technologies applicable to point source category wastes, including, but not limited to air pollution, noise, radiation, sludge and solid waste generation, and energy used.

NPDES. National Pollutant Discharge Elimination System.

NSPSs. New Source Performance Standards.

Outfall. The mouth of conduit drains and other conduits from which a facility effluent discharges into receiving waters.

Point source. Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft from which pollutants are or may be discharged. The term does not include agricultural stormwater discharges or return flows from irrigated agriculture. *See* CWA Section 502(14), 33 U.S.C. 1362(14); 40 CFR 122.2.

Pollutants of Concern (POCs). Pollutants commonly found in meat and poultry processing wastewaters. Generally, a chemical is considered as a POC if it was detected in untreated process wastewater at 5 times a baseline value in more than 10% of the samples.

Poultry. Broilers, other young chickens, hens, fowl, mature chickens, turkeys, capons, geese, ducks, exotic poultry (e.g., ostriches), and small game such as quail, pheasants, and rabbits. This category may include species not classified as "poultry" by USDA FSIS and that may or may not be under USDA FSIS voluntary inspection.

POTW. Publicly owned treatment works. Any device or system owned by a state or municipality that is used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature. These include sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment. *See* CWA Section 212, 33 U.S.C. 1292; 40 CFR 122.2, 403.3.

Priority Pollutant. One hundred twenty-six compounds that are a subset of the 65 toxic pollutants and classes of pollutants outlined pursuant to Section 307(a) of the CWA. They are listed at 40 CFR Part 423 Appx A.

PSES. Pretreatment Standards for existing sources of indirect discharges, under Section 307(b) of the CWA.

PSNS. Pretreatment standards for new sources under Section 307(c) of the CWA.

Raw Material. The basic input materials to a renderer composed of animal and poultry trimmings, bones, meat scraps, dead animals, feathers and related usable by-products.

RCRA. The Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 *et seq.*

RO. Reverse osmosis.

RFA. Regulatory Flexibility Act.

SBA. Small Business Administration.

SBR. Sequencing batch reactor.

SBREFA. Small Business Regulatory Enforcement Fairness Act of 1996.

Sediment. Particulate matter lying below water.

SER. Small Entity Representative.

SIC. Standard Industrial Classification (SIC)—A numerical categorization system used by the U.S. Department of Commerce to catalogue economic activity. SIC codes refer to the products, or group of products, produced or distributed, or to services rendered by an operating establishment. SIC codes are used to group establishments by the economic activities in which they are engaged. SIC codes often denote a facility's primary, secondary, tertiary, etc. economic activities.

Surface water. All waters of the United States, including rivers, streams, lakes, reservoirs, and seas.

TKN. Total Kjeldahl Nitrogen.

Total Nitrogen. Sum of nitrate/nitrite and TKN.

Toxic pollutants. As identified under the CWA, 65 pollutants and classes of pollutants, see 40 CFR 401.15, of which 126 specific substances have been designated priority toxic pollutants. *See* Appendix A to 40 CFR part 423.

TSS. Total suspended solids.

UMRA. Unfunded Mandates Reform Act.

USDA. United States Department of Agriculture.

UV. Ultra-violet light.

Variability factor. Calculated from the concentration data from the facilities using the BAT technologies that incorporates all components of variability including process and wastewater generation, sample collection, shipping, storage, and analytical variability.

List of Subjects in 40 CFR Part 432

Environmental protection; Meat and meat products; Poultry and poultry products; Waste treatment and disposal; Water pollution control.

Michael S. Regan,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend 40 CFR part 432 as follows:

PART 432 — MEAT AND POULTRY PRODUCTS POINT SOURCE CATEGORY

1. The authority for part 432 continues to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

2. Amend § 432.2 by:

a. Redesignating paragraph (c) as (d) and adding new paragraph (c).

b. Adding new paragraphs (l) (7), (m), (n) and (o).

The additions read as follows:

§ 432.2 General definitions.

* * * * *

(c) E. coli means the bacterial count, as determined by approved methods of analysis for Parameter 4 in Table 1A in 40 CFR 136.3.

(d) Fecal coliform means the bacterial count, as determined by approved methods of analysis for Parameter 1 in Table 1A in 40 CFR 136.3.

* * * * *

(l)(7) Total Phosphorus means the total of particulate and soluble phosphorus

(m) The term nitrification means oxidation of ammonium salts to nitrites (via Nitrosomas bacteria) and the further oxidation of nitrite to nitrate via Nitrobacter bacteria. (n) The term denitrification means the microbial process of reducing nitrate and nitrite to gaseous nitrous oxide, and nitrogen gas.

(o) The term phosphorus removal means removal of particulate and soluble phosphorus by biological uptake and solids settling and removal.

Subpart A [Amended]

3. Amend § 432.12 (a)(1) by revising the table "Effluent Limitations [BPT]" to read as follows:

§ 432.12 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(a)* * *

(1)* * *

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.24	0.12
Fecal Coliform	50([2])	22([2])
O&G[4]	0.12	0.06
TSS	0.40	0.20

[1] Pounds per 1000 lbs (or g/kg) LWK.

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

4. Amend § 432.13 by revising the table "Effluent Limitations [BAT]" to read as follows:

§ 432.13 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

* * * * *

Effluent Limitations [BAT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14(2)	9(2)

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

5. Revise § 432.14 to read as follows:

§ 432.14 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart A—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg[1]**
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

6. Amend § 432.15 by revising introductory text and paragraph (b)(1) and removing paragraph (c) to read as follows:

§ 432.15 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.15 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.12 and 432.13 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.14 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) * * *

(1) In the case of process wastewater associated with the slaughtering of animals on-site or the processing of the carcasses of animals slaughtered on-site, the standards for BOD_5, fecal coliform, O&G, and TSS are the same as the limitations specified in § 432.12(a)(1) and the standards for ammonia (as N) total nitrogen, total phosphorus, and E. coli are as follows:

Performance Standards [NSPS]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14(2)	9(2)

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

* * * * *

7. Revise § 432.16 to read as follows:

§ 432.16 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSNS):

Subpart A—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

Subpart B [Amended]

8. Amend § 432.22 by revising the table in paragraph (a)(1) "Effluent Limitations [BPT] table to read as follows:

§ 432.22 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

Effluent Limitations [BPT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
BOD_5	0.42	0.21
Fecal Coliform	50([2])	22([2])

O&G[4]	0.16	0.08
TSS	0.50	0.25

[1] Pounds per 1000 lbs (or g/kg) LWK.

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

9. Revise § 432.23 to read as follows:

§ 432.23 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) must achieve the following effluent limitations representing the application of BAT: Limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen are the same as specified in § 432.13.

10. Revise § 432.24 to read as follows:

§ 432.24 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.14.

11. Amend § 432.25 by revising introductory text and paragraph (b)(1) and removing paragraph

(c) to read as follows:

§ 432.25 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.25 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.22 and 432.23 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.24 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) * * *

(1) In the case of process wastewater associated with the slaughtering of animals on-site or the processing of the carcasses of animals slaughtered on-site, the standards for BOD5, fecal coliform, O&G, and TSS are the same as the corresponding limitations specified in § 432.22(a)(1) and the standards for ammonia (as N), total phosphorus, E. coli, and total nitrogen are the same as the limitations specified in § 432.15(b)(1).

* * * * *

12. Revise § 432.26 to read as follows:

§ 432.26 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.16.

Subpart C [Amended]

13. Amend § 432.32 by revising the table in paragraph (a)(1) "Effluent Limitations [BPT]" to read as follows:

§ 432.32 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(a) * * *

(1) * * *

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.34	0.17
Fecal Coliform	50([2])	22([2])
O&G[4]	0.16	0.08
TSS	0.48	0.24

[1] Pounds per 1000 lbs (or g/kg) LWK.

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

14. Revise § 432.33 to read as follows:

§ 432.33 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) must achieve the following effluent limitations representing the application of BAT: the limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen are the same as specified in § 432.13.

15. Revise § 432.34 to read as follows:

§ 432.34 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.14.

16. Amend § 432.35 by revising the introductory text and paragraph (b)(1) and removing paragraph (c) to read as follows:

§ 432.35 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.35 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.32 and 432.33 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.34 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) * * *

(1) In the case of process wastewater associated with the slaughtering of animals on-site or the processing of the carcasses of animals slaughtered on-site, the standards for BOD5, fecal coliform, TSS, and O&G are the same as the corresponding limitations specified in § 432.32(a)(1) and the standards for ammonia (as N) , total phosphorus, E. coli, and total nitrogen are the same as the limitations specified in § 432.15(b)(1).

* * * * *

17. Revise § 432.36 to read as follows:

§ 432.36 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.16.

18. Amend § 432.42 by revising the table in paragraph (a)(1) "Effluent Limitations [BPT]" to read as follows:

§ 432.42 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(a) * * *

(1) * * *

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**

BOD_5	0.48	0.24
Fecal Coliform	50([3])	22([3])
O&G[4]	0.26	0.13
TSS	0.62	0.31

[1] Pounds per 1000 lbs (or g/kg) LWK.

[2] The values for BOD5 and TSS are for average plants, i.e., plants where the ratio of avg. wt. of processed meat products/avg. LWK is 0.55. Adjustments can be made for high-processing packinghouses operating at other such ratios according to the following equations: lbs BOD5/1000 lbs LWK = 0.21 + 0.23 (v—0.4) and lbs TSS/1000 lbs LWK = 0.28 + 0.3 (v—0.4), where v equals the following ratio: lbs processed meat products/lbs LWK.

[3] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

19. Revise § 432.43 to read as follows:

§ 432.43 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) must achieve the following effluent limitations representing the application of BAT: Limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen are the same as specified in § 432.13.

20. Revise § 432.44 to read as follows:

§ 432.44 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.14.

21. Amend § 432.45 by revising the introductory text and paragraph (b)(1) and removing paragraph (c) to read as follows:

§ 432.45 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.45 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.42 and 432.43 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.44 of this part (for indirect dischargers Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) * * *

(1) In the case of process wastewater associated with the slaughtering of animals on-site or the processing of the carcasses of animals slaughtered on-site, the standards for BOD5, fecal coliform, O&G, and TSS are the same as the corresponding limitations specified in § 432.22(a)(1) and the standards for ammonia (as N), total phosphorus, E. coli, and total nitrogen are the same as the limitations specified in § 432.15(b)(1).

* * * * *

22. Revise § 432.46 to read as follows:

§ 432.46 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 50 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES): Limitations for BOD, TSS, oil and grease are the same as specified in § 432.16.

Subpart F [Amended]

23. Amend § 432.62 by revising paragraph (b) to read as follows:

§ 432.62 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.036	0.018
Fecal Coliform	50([2])	22([2])
O&G[3]	0.012	0.006
TSS	0.044	0.022

[1] Pounds per 1000 lbs (or g/kg) of finished product.

[2] MPN or CFU per 100 mL

[3] May be measured as hexane extractable material (HEM).

* * * * *

24. Amend § 432.63 by revising paragraph (b) to read as follows:

§ 432.63 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BAT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14(2)	9(2)

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

25. Revise § 432.64 to read as follows:

§ 432.64 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a

publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart F—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

26. Amend § 432.65 by revising the introductory text and paragraphs (b) and removing paragraph (c) to read as follows:

§ 432.65 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards specified in §§ 432.65 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.62 and 432.63 of this part (for direct dischargers) or the revised pretreatment standards in § 432.64 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the limitations for BOD_5, fecal coliform, O&G, and TSS specified in § 432.62(b) and the limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen specified in § 432.63(b).

27. Revise § 432.66 to read as follows:

§ 432.66 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart F—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L.

Subpart G—Pretreatment Standards for Existing Sources [PSES]

28. Amend § 432.72 by revising paragraph (b) to read as follows:

§ 432.72 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BPT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]

BOD_5	0.56	0.28
Fecal Coliform	50([2])	22([2])
O&G[4]	0.20	0.10
TSS	0.68	0.34

[1] Pounds per 1000 lbs (or g/kg) of finished product.

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

29. Amend § 432.73 by revising paragraph (b) to read as follows:

§ 432.73 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BAT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14([2])	9([2])

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

30. Revise § 432.74 to read as follows:

§ 432.74 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart G—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

31. Amend § 432.75 by revising the introductory text and paragraphs (b) and removing paragraph (c) to read as follows:

§ 432.75 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.75 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.72 and 432.73 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.74 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the limitations for BOD_5, fecal coliform, O&G, and TSS specified in § 432.72(b) and the limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen specified in § 432.73(b).

32. Revise § 432.76 to read as follows:

§ 432.76 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart G—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L.

Subpart H [Amended]

33. Amend § 432.82 by revising paragraph (b) to read as follows:

§ 432.82 Effluent limitations attainable by the application of the best practicable

control technology currently available (BPT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.62	0.31
Fecal Coliform	50([2])	22([2])
O&G[3]	0.22	0.11
TSS	0.74	0.37

[1] Pounds per 1000 lbs (or g/kg) of finished product.

[2] MPN or CFU per 100 mL

[3] May be measured as hexane extractable material (HEM).

* * * * *

34. Amend § 432.83 by revising paragraph (b) to read as follows:

§ 432.83 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BAT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14(2)	9(2)

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

35. Revise § 432.84 to read as follows:

§ 432.84 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart H—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

36. Amend § 432.85 by revising the introductory text and paragraph (b) and removing paragraph (c) to read as follows:

§ 432.85 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.85 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.82 and 432.83 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.84 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the limitations for BOD_5, fecal coliform, O&G, and TSS specified in § 432.82(b) and the limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen specified in § 432.83(b).

37. Revise § 432.86 to read as follows:

§ 432.86 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart H—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

Subpart I [Amended]

38. Amend § 432.92 by revising paragraph (b) to read as follows:

§ 432.92 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.74	0.37
Fecal Coliform	50([2])	22(2)
O&G[4]	0.26	0.13
TSS	0.90	0.45

[1] Pounds per 1000 lbs (or g/kg) of finished product.

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

* * * * *

39. Amend § 432.93 by revising paragraph (b) to read as follows:

§ 432.93 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the following effluent limitations:

Effluent Limitations [BAT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14([2])	9([2])

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

40. Revise § 432.94 to read as follows:

§ 432.94 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart I—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg[1]**
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

41. Amend § 432.95 by revising the introductory text and paragraph (b) and removing paragraph (c) to read as follows:

§ 432.95 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.95 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.92 and 432.93 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.94 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that generate more than 50 million pounds per year of finished products must achieve the limitations for BOD_5, fecal coliform, O&G, and TSS specified in § 432.92(b) and the limitations for ammonia (as N), total phosphorus, E. coli, and total nitrogen specified in § 432.93(b).

42. Revise § 432.96 to read as follows:

§ 432.96 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 50 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart I—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]

BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

Subpart J [Amended]

43. Amend § 432.102 by revising paragraph (a) to read as follows:

§ 432.102 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT:

Effluent Limitations [BPT]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg.[1]**
BOD_5	0.34	0.17
Fecal Coliform	50([2])	22([2])
O&G[4]	0.20	0.10
TSS	0.42	0.21

[1] Pounds per 1000 lbs (or g/kg) of raw material.

[2] MPN or CFU per 100

[4] May be measured as hexane extractable material (HEM).

* * * * *

44. Revise § 432.103 to read as follows:

§ 432.103 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided by 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BAT:

Effluent Limitations [BAT]

Regulated parameter	Maximum daily	Maximum monthly avg.
Ammonia (as N)[1]	0.14	0.07
Total Nitrogen[2]	20	12
Total Phosphorus	1.5	0.8
E. Coli	14([3])	9([3])

[1] Pounds per 1000 lbs (g/kg) of raw material (RM).

[2] mg/L (ppm)

[3] MPN or CFU per 100 mL

45. Revise § 432.104 to read as follows:

§ 432.104 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that uses raw material at rates more than 10 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart J—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

46. Amend § 432.105 by revising paragraph (a) and removing paragraph (c) to read as follows:

§ 432.105 New source performance standards (NSPS).

(a) Facilities subject to the 2004 new source performance standards in §§ 432.105 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.102 and 432.103 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.104 of this part (for indirect dischargers). Except as provided in paragraph (c) of this section, any source that is a new source subject to this subpart must achieve the following performance standards:

Performance Standards [NSPS]

Regulated parameter	Maximum daily	Maximum monthly avg.
Ammonia (as N)[1]	0.14	0.07
BOD_5[1]	0.18	0.09
E. coli	14 ([2])	9 ([2])
Fecal coliform	50([2])	22([2])

O&G[4]	0.10	0.05
Total Nitrogen[5]	20	12
Total Phosphorus[5]	1.5	0.8
TSS[1]	0.22	0.11

[1] Pounds per 1000 lbs (or g/kg) of raw material (RM).

[2] MPN or CFU per 100 mL

[4] May be measured as hexane extractable material (HEM).

[5] mg/L (ppm).

* * * * *

47. Revise § 432.106 to read as follows:

§ 432.106 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that uses raw material at rates more than 10 million pounds per year that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart J—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

Subpart K [Amended]

48. Revise § 432.112 to read as follows:

§ 432.112 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that slaughters more than 100 million pounds per year (in units of LWK) must achieve the following effluent limitations representing the application of BPT:

Effluent Limitations [BPT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
BOD_5	26	16
Fecal Coliform	50([2])	22([2])
O&G (as HEM)	14	8.0
TSS	30	20

[1] mg/L (ppm)

[2] MPN or CFU per 100 mL

49. Revise § 432.113 to read as follows:

§ 432.113 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that slaughters more than 100 million pounds per year (in units of LWK) must achieve the following effluent limitations representing the application of BAT:

Effluent Limitations [BAT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14([2])	9([3])

[1] (mg/L) (ppm).

[2] MPN or CFU per 100 mL

50. Revise § 432.114 to read as follows:

§ 432.114 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 100 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart K—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925

Oil and grease	1635	1393

[1] mg/L

51. Amend § 432.115 by revising the introductory text and paragraph (b) to read as follows:

§ 432.115 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.115 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.112 and 432.113 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.114 of this part (for indirect dischargers). Any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that slaughter more than 100 million pounds per year (in units of LWK) must achieve the following performance standards:

Performance Standards [NSPS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
BOD_5	26	16
E. coli	14 ([2])	9 ([2])
Fecal Coliform	50([2])	22([2])
O&G (as HEM)	14	8.0
TSS	30	20

Total Phosphorus	1.5	0.8
Total Nitrogen	20	12

[1] mg/L (ppm)

[2] MPN or CFU per 100 mL

52. Revise § 432.116 to read as follows:

§ 432.116 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that slaughters more than 100 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart K—Pretreatment Standards for New Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

Subpart L [Amended]

53. Revise § 432.122 to read as follows:

§ 432.122 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that further processes more than 7 million pounds per year (in units of finished

product) must achieve the following effluent limitations representing the application of BPT:

Effluent Limitations [BPT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
BOD_5	26	16
Fecal Coliform	50([2])	22([3])
O&G (as HEM)	14	8.0
TSS	30	20

[1] mg/L (ppm)

[2] MPN or CFU per 100 mL

54. Revise § 432.123 to read as follows:

§ 432.123 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart that further processes more than 7 million pounds per year (in units of finished product) must achieve the following effluent limitations representing the application of BAT:

Effluent Limitations [BAT]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
Total Nitrogen	20	12
Total Phosphorus	1.5	0.8
E. Coli	14([2])	9([2])

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

55. Revise § 432.124 to read as follows:

§ 432.124 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 7 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for existing sources (PSES):

Subpart L—Pretreatment Standards for Existing Sources [PSES]

Regulated parameter	**Maximum daily[1]**	**Maximum monthly avg[1]**
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L

56. Amend § 432.125 by revising the introductory text and paragraph (b) to read as follows:

§ 432.125 New source performance standards (NSPS).

Facilities subject to the 2004 new source performance standards in §§ 432.125 of this part continue to be subject to those standards. These 2004 new sources are also subject to revised BPT and BAT effluent limitations specified in § 432.122 and 432.123 of this part (for direct dischargers) or the revised pretreatment standards specified in § 432.124 of this part (for indirect dischargers). Any source that is a new source subject to this subpart must achieve the following performance standards:

* * * * *

(b) Facilities that further process more than 7 million pounds per year (in units of finished product) must achieve the following performance standards:

Effluent Limitations [NSPS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
Ammonia (as N)	8.0	4.0
BOD_5	26	16
E. coli	14	9
Fecal Coliform	50([2])	22([2])
O&G (as HEM)	14	8.0
TSS	30	20
Total Phosphorus	1.5	0.8
Total Nitrogen	20	12

[1] mg/L (ppm).

[2] MPN or CFU per 100 mL

57. Revise § 432.126 to read as follows:

§ 432.126 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that processes more than 7 million pounds per year (in units of LWK) that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the following pretreatment standards for new sources (PSNS):

Subpart L—Pretreatment Standards for Existing Sources [PSNS]

Regulated parameter	Maximum daily[1]	Maximum monthly avg[1]
BOD	1945	1323
TSS	1578	925
Oil and grease	1635	1393

[1] mg/L.