proposing a separate provision which mentions received was carefully reviewed, an Act); tions differences in the raw waste load is largely achieved no discharge commonly allow phosphate fertilizer plants which promote precipitation. The pH limitations promulgated will not adversely affect aquatic organisms.

(3) It was stated that even those plants in the phosphate category which employ 92 percent sulphuric acid (rather than 93 percent) and which therefore contribute no water to the gypsum pond from the process, cannot consistently achieve no discharge. Moreover, the use of gypsum pond water to dilute the sulphuric acid was claimed to be unproved.

Gypsum pond water dilution of sulphuric acid is presented as one method of insuring a negative water balance in the gypsum pond, so that no contaminated water need be discharged except during periods of intense precipitation — the level of control specified as attainable by the best available technology economically achievable. This technology is currently in use in European plants, is domestically available through two process design companies, and has recently been put Into operation on a major American plant. Other methods of achieving a negative water balance are also available to plants utilizing concentrated as well as dilute acid. For example, companies which employ concentrated acid and which have not achieved no discharge commonly allow rainwater runoff from surrounding areas to enter their gypsum ponds, thus substantially increasing the volume of influent water which the pond must accept. Curtailment of this practice would allow plants to meet the no discharge requirement except during periods of catastrophic rainfall. The issue is discussed in more detail in paragraph (5), below.

(4) One company requested that separate subcategories be established for those phosphate fertilizer plants which recover fluoride and those which do not have a market for it. The justification offered for this additional subcategorization was that the latter plants will have a much higher fluoride concentration in their raw waste water.

The fact of higher fluoride concentrations in the raw waste load is largely irrelevant since lime precipitation (one technology cited in the Development Document) will achieve the effluent limitations on fluoride regardless of whether or not a portion of the fluoride is recovered in the process.

(5) The concept of total impoundment of gypsum pond water was severely criticized. Several plants pump storm runoff into their gypsum ponds, making a state of no discharge impossible. The cost of treating gypsum pond overflow for storms up to a 24 hour, 10 or 25 year rainfall event was stated to be excessive.

The problem of gypsum pond water containment is one of the questions as practiced at many plants of pumping storm runoff into the gypsum ponds. In some
instances, this practice is used to cheaply obtain makeup water for the pond. The 1977 limitations require retention of gypsum pond water except during times of chronic rainfall.

There currently are plants that can achieve no discharge of gypsum pond water except during periods of very heavy rainfall. For the purpose of this regulation, periods of very heavy rainfall are defined to be those months in which the amount of precipitation exceeds the amount of evaporation. During such chronic rainfalls there may be discharged an amount of water equal to the difference between the rainfall and the evaporation within the gypsum pond. Drainage area outside the boundaries of the gypsum pond is not to be included in the calculation of the precipitation volume.

This discharge from the pond must be treated to the limits specified in the regulation. This degree of treatment is also currently being attained by plants within the industry.

So that a plant need not treat a discharge only at the time of a chronic rainfall, the plant is allowed to gradually release from the pond the quantity of water attributable to the difference between rainfall and evaporation for that month, on the basis of past records for these events. These data may be obtained from the National Climatic Center, National Oceanic and Atmospheric Administration in Asheville, North Carolina, the successor agency to the U.S. Weather Bureau or if such records are lacking, from the plant's own records.

While it is possible to treat excess precipitation during or in anticipation of a chronic rainfall, it is impracticable to treat gypsum pond overflow resulting from catastrophic or near catastrophic rainfall events. Standard engineering practice includes design, construction and operation of treatment ponds with sufficient freeboard to contain a 24 hour, 10 to 50 year rainfall event. In this regulation best practicable control technology currently available specifies retention of a 24 hour, 10 years rainfall event. Best available demonstrated control technology and best available technology economically achievable specify retention of a 24 hour, 25 year rainfall event.

The gypsum ponds contain such hazardous materials as toxic metals and radioactive substances, particularly if Florida phosphate rock is used. It is therefore imperative that discharge from such ponds be prevented as far as it is practicable. This may include direct discharge of storm runoff rather than pumping it into the gypsum pond.

(6) The proposed limitation on ammonia nitrogen in discharges from gypsum ponds permitted during chronic rainfall was criticized as too stringent. It was pointed out that the concentration of nitrogen compounds in existing impoundments can reach several hundred mg/l, that future air emission control systems will increase the level of discharge to these ponds, and that specific treatment for ammonia nitrogen removal is prohibitively expensive. It was also brought out that in requiring a closed water system for ammonium phosphate operations by 1977, in-process changes would be necessary and that this is not the industry's position. Infiltration of pond water to subsurface waters is not within the scope of the Act and hence cannot be controlled by this regulation. However, the promulgated limitation would not necessarily ensue because of the extremely high levels of ammonia nitrogen in impoundments from previous discharges.

Control of ammonia nitrogen depends on use of the self-contained process for diammonium phosphate currently in use in three plants. Use of this process allows total recirculation of those waste streams containing ammonium nitrogen. Process changes are necessary to achieve a total recirculation system, and as the result of public comment EPA has re-considered its position and now considers total recirculation for this process as best available technology economically achievable and best available demonstrated control technology rather than best practicable control technology currently available. However, even were this process to be universally adopted, achievement of this limitation would not necessarily ensue because of the extremely high levels of ammonia nitrogen in impoundments from previous discharges.

Since best practicable technology available to reduce these ammonia nitrogen levels in the gypsum pond the parameter has been eliminated. All plants will be required to achieve no discharge of ammonia nitrogen in impoundments attributable to catastrophic rainfall events) as well as all other process waste water pollutants by 1963. No significant individual and overall effects are expected as the result of deleting the no discharge requirement for this manufacturing operation as a 1977 requirement. The only allowed discharge from the gypsum pond (for which no phosphorus waste streams are discharged) will be during periods of high rainfall, thereby minimizing environmental effects.

(7) One commenter urged that effluent limitations be related to the resulting water quality, particularly for those plants located in areas where past discharges have had measurable effect on water quality and local water resources. The Agency believes the proposed limitation on total suspended solids to be too low, considering the normal suspended solids concentrations in many rivers.

The POTW limits for phosphorus in streams for separate regulatory mechanisms, effluent limitations guidelines and water quality standards. The former, including this regulation, are intended to be based upon specified levels of technology and independent of the quality of receiving water in various locations. The data available to EPA indicate that the effluent limitations on phosphorus in discharges of suspended solids are attainable through technology currently in use in the phosphate subcategory.

(8) One commenter suggested that the regulation should prohibit seepage of pond water to ground water. It was pointed out that under seepage from treatment ponds, and the Agency does not advocate such seepage for this industry.

(9) A limit for radium-226 was requested, and a minimum pH of 8.0 was suggested to assure a high degree of removal.

Uranium occurs naturally in phosphate rock, especially that from Florida. Radium-226 is a particularly dangerous decay product of uranium. On the basis of the data available, the Agency believes that double lime treatment of gypsum pond water described in the Development Document adequately removes radium-226 to a level below 3.0 picocuries when the pH is maintained above 9.0. In order to insure that this hazardous element does not enter the environment in an uncontrolled manner, the pH range has been changed from 8.0-9.0 to 8.0-9.5. The upper pH limitation was raised because of the difficulty of maintaining pH within one unit range even with automatic equipment.

(10) With respect to the effluent limitations on ammonia in the nitrogen fertilizer subcategories, it was argued that air stripping simply disperses the ammonia to the atmosphere and that the ammonia thus released would eventually reappear in the water cycle.

Air stripping of ammonia is one technology available to meet the effluent limitations. Other alternatives (such as double liming and steam stripping or urea hydrolysis) produce no discharge of ammonia to the atmosphere. There are currently no EPA air standards for ammonia and the concentration levels of ammonia produced from air stripping towers are below the threshold levels of human odor perception.

(11) One commenter complained that separate limitations for each manufacturing element of the nitrogen fertilizer segment (e.g., urea, ammonia, etc.) is impracticable for a complex utilizing a common sewer for all waste water.

While many nitrogen fertilizer plants do produce more than one element, that is not necessarily the case. Moreover, for nitrogen fertilized complexes the best practicable control technology involves the segregation of process waste waters from the component parts of the complex and design of treatment systems which are capable of adequately treating the specific waste streams. For example, steam stripping of process waste waters from ammonia manufacturing operations is capable of a definite level of performance. The Agency believes this level of performance should be specified rather than submerged in a generalized numerical limitation composed of the summation of limitations on wastes from other process steps.

(12) Several comments reproved the Agency for not taking into account leaks and spills when establishing the proposed guidelines. Other commenters characterized the treatment conditions to be applied in the Development Document as unproved, "State of the Art" and unreliable.

The effluent limitations required by the best practicable control technology currently available and best available technology are promulgated systems now in place in plants in this industry (e.g., double liming and steam stripping) and the promulgated limita-
tions reflect the performance of these systems. The effluent limitations required by the best available technology econ-
nomically achievable represent either the estimated potential performance of existing technology in place in some
plants in the industry (e.g., urea hydroly-
ysis and ion exchange) or the estimated capability of treatment technologies, which are not now in use by the fertilizer
industry, but which have successfully
operated and prompt maintenance will minimize waste from leaks and
spills. Moreover, the waste water which
does occur can be segregated from conti-
taminated streams and recovered for dry
disposal or reused in the production
process.
(13) It was pointed out that more oil
is the judgment of
EPA that for this particular category
and grease limitations should be based
instead on water quality criteria.
(14) The use of ion exchange for treat-
ment of ammonium nitrate process waste
waters was criticized as being imprac-
ticable. The data for oil and grease for both
subcategories have been carefully re-
viewed, and it was recognized that the
limits are within the range of question-
able reproductibility for the standard
method of analysis. The option exists to
increase the limit to a point where the
analysis would be reliable. However, this
would in effect allow more oil and grease
to be discharged. It is the judgment of
EPA that for this particular category
and grease limitations should be based
instead on water quality criteria.
(15) A representative of one company
complained that nitrogen fertilizer solu-
tions were not covered in the regulation.
Ammonium nitrate and nitric acid solu-
tions are covered by this regulation. The
Agency considers the prevention of leaks and spillage resulting from
ions making solutions to be one of ade-
quate housekeeping. Hence, the regula-
tion need not and should not contain an
additional allowance for pollution from
such operations.
(16) Some commenters were received
suggesting that the Agency establish sep-
arate limitations in the ammonium ni-
trate subcategory for those plants which
employ prilling. Most ammonium nitrate is prilled. At
the time the proposed regulations were
developed, the Agency did not have suf-
cient data to establish limitations for
nonprilling ammonium nitrate plants.
Hence the proposed limitations were
based on plants which do prill their prod-
uct. Separate limitations based on the
Agency's review of additional data are
included in the promulgated regulations.
(17) It was argued that manufacturing
operators other than ammonia will ab-
sorb airborne ammonia in cooling towers
and therefore no leaching occurs. Fur-
thermore, placing ammonia limits on non-
contact cooling water was said to penal-
ize those operations that maximize water
recovery. Recirculating cooling water
will not absorb airborne ammonia. Con-
versely, it was argued by other comment-
ers that limitations on the amounts of
zinc and chromium which may be dis-
charged in recirculating cooling water
should be added.
(18) Apparent typographical errors in
the proposed regulation were pointed out.
The errors apparently occurred in typosetting and an errata was published in the Fed-
ERAL REGISTER on January 9, 1974 (39 FR 1454).
(19) A representative of one company
complained that nitrogen fertilizer solu-
tions were not covered in the regulation.
Ammonium nitrate and nitric acid solu-
tions are covered by this regulation. The
Agency considers the prevention of leaks and spillage resulting from
ions making solutions to be one of ade-
quate housekeeping. Hence, the regula-
tion need not and should not contain an
additional allowance for pollution from
such operations.
(20) Some commenters stated that in
view of the changing economy and energy
situation the overall cost to benefit ratio
must be weighed for the 1983 standards.
While the Act does not require that an
explicit "cost/benefit" exercise be under-
taken in establishing the effluent limita-
tions guidelines attainable by the best
available control technology economically
achievable, it does require that the
guidelines are to be revised annually if
appropriate. If factors such as those
mentioned indicate that a change is
necessary, EPA will consider any such
change. At present, however, neither the
economic impact nor the energy con-
sumption implications of the 1983 stan-
dards appear unreasonable.
(21) Your contributors requested that
all the data used to formulate the guide-
lines be divulged.
(22) A commenter stated that the
standards should be based on an indus-
try-wide average not just on exemplary
plants.
(23) Several commenters questioned
the validity of the cost data and econ-
omic analysis and stressed that many
small and older plants would be closed
as the result of the costs of pollution con-
trol equipment.
The costs were determined by a con-
tactor highly knowledgeable in the fer-
tilizer industry. Many of the cost argu-
ments were concerned very localized
issues that cannot be accounted for in a gen-
eral cost estimate. Many of the objections
to costs and adverse economic impact
should be settled as the result of assess-
ment of new data submitted to the EPA
and the subsequent changes made in the
regulation. The effects of these modifi-
cations are explained in the economic
impact portion of this preamble.
(24) Several commenters also ques-
tioned the severity of the standards for
the daily maximum. Some commenters
claimed that the EPA has declared the
existing treatment to be wholly inade-
quate and has used the presence of the
best plants which are too few to be represen-
tative.
(25) Data from this industry indicate
that a factor of two between the 50 day av-
verages and the daily maxima are reason-
able for the treatment technologies cited
in the Development Document. The addi-
tional allowance requested for the daily
maximum is based on long-term behav-
ior. This issue is discussed in comment (15).
All of the proposed standards are based on
treatment technology currently in place in the Industry. Because of the
general inadequacy of waste treatment

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within the industry, there are only a few plants in some subcategories that were deemed to exhibit exemplary performance, and where new data and public comment certain proposed standards have been revised to reflect the performance of the exemplary plants in each subcategory. Partial standards have been revised to reflect the performance of the exemplary plants in each subcategory.

There was considerable concern expressed as to effect on production by high energy demanding treatment systems in light of the current energy allocation practices. In particular, it was charged that implementation of the proposed standards would worsen the current fertilizer shortage and will in turn decrease food production.

Studies indicated that the economic impact to this industry will be minimal since ion exchange is no longer required to meet ammonium nitrate limitations. These issues are discussed in the economic impact section of this preamble. The energy increase is less than 2% for application of the best practicable control technology. Alternatives that use less energy do not satisfactorily control pollution.

The Committee's proposal is under evaluation as a contribution toward future refinements of guidelines for some industries. The Committee has indicated that its proposed methodology could not be developed in time to be available for the current phase of guideline promulgation, which is proceeding according to a court-ordered schedule. Its present status is that it does not provide sufficient evidence to warrant the Agency's delaying issuance of any standard in hopes that an alternative approach might be preferable.

It was suggested that concentration limits be used instead of production-based limitations. Expressing effluent limitations in mass units requires more labor intensive calculations (kg of nutrient per kg of product) rather than in concentrations insures that limitations are not met by the simple expedient of diluting the waste stream. Limitations for the phosphate subcategory were given in concentration units because discharges are related solely to rainfall and production.

It was suggested that only Standard Methods be used and not newly determined EPA methods and that the pollutant parameters should be defined according to the method of analysis.

The methods of analysis to be used for quantitative analysis of waste water parameters were promulgated in the Federal Register on October 16, 1973, at 40 CFR Part 155. The General Provisions (40 CFR Part 411) have been revised to define all pollutants or pollutant properties by the method of analysis.

The title to each section as well as the text clearly indicate that the limitations apply only to new sources.

A commenter stated that the fraction of nitrogen in the form of one species can be naturally converted to another form (e.g., ammonia to nitrite to nitrate) and that the guidelines should take this into account.

This conversion occurs at a slow rate and specific conditions must be met before the reaction can occur. Most of the technologies cited in the Development Document operate continuously, and it is doubtful whether nitrification or other conversion reactions will have the time to occur. For the remaining technologies where ponds are used, the treatment technologies either prevent entry of nitrogen into the pond or treat the alternate forms of nitrogen. An example of the latter are nitrification and denitrification systems.

Concern was expressed regarding fluoride emissions from gypsum ponds. Fluoride emissions from the latter are nitrification and denitrification systems, which produce fluoride will be precipitated and fluorine emissions to the air will be negligible.

One commenter stated that the regulation should specify that the sections of the NPDES permit more or less stringent than the effluent guidelines limitations.

Revision of the proposed regulation prior to promulgation. As a result of public comments and continuing review and evaluation of the proposed regulation by EPA the following changes have been made in the regulation.

(1) Minor adjustments have been made to reflect the fact that an increased number of definitions and analytical methods have been included in 40 CFR Part 401 and are incorporated by reference in this part.

(2) Examination of new data submitted during the period of public comment and re-evaluation of existing data has shown that the proposed limits in the phosphate subcategory for total phosphorus, nitrogen, and total suspended nonfilterable solids were too severe. These limits were appropriately readjusted in response to comments (1) and (6). The pH limits were also raised in answer to comment (9) in order to insure adequate treatment of radium-226.

(3) For the reasons following comment (17) this regulation will not regulate ammonia in noncontact cooling water. A regulation governing discharge of noncontact cooling water will be promulgated at a later date.

(4) Oil and grease limitations have been excluded in the ammonia subcategory for the reasons described in comment (31).

(5) The ammonium nitrate subcategory limitations were modified to reflect the fact that ion exchange is considered to be both demonstrated and best available technologies (comment 15). The levels for best practicable control technology currently available reflect the results of good housekeeping at exemplary plants not using ion exchange.

The data did not indicate that this proposed was a process waste water pollutant. Hence, no limitation was given.

A commenter stated that the limitations should be used as guidelines and not rigid standards by a Regional Administrator in implementing the NPDES program.

The Act intends that uniform standards be set for each category. In establishing the limitations for the fertilizer category EPA took into account all information it was able to collect, develop and solicit with respect to factors such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs which can affect the industry subcategorization and effluent limits established. If an individual discharger can prove that factors relating to the equipment of facilities involved, the process applied, or other factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines, the Regional Administrator or the State can establish limitations for the fertilizer subcategories.

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(6) Separate limits for prilled and nonprilled ammonium nitrate are promulgated for the reasons given in answer to comment (16).

(7) Section 304(b) (1) (B) of the Act provides for guidelines" to implement the uniform national standards of section 304 (d) (1) (B) Congress recognized that some flexibility was necessary in order to take into account the complexity of the industrial world with respect to the practicability of pollution control technology. In accordance with the Congressional intent and in recognition of the possible failure of these regulations to account for all factors bearing on the practical use of pollution control technology, it was concluded that some provision was needed to authorize flexibility in the strict application of the limitations contained in the regulation where required by special circumstances applicable to individual dischargers. Accordingly, a provision allowing flexibility in the application of the limitations representing best practicable control technology currently available has been added to each subpart, to account for special circumstances that may not have been adequately accounted for when these regulations were developed.

(c) Economic impact. The changes reflected in the final guidelines have not substantially altered the economic analysis presented in the proposed package with the exception of the ammonium nitrate and the ammonium phosphate segments. The revised guidelines for best practicable control technology in the ammonium nitrate subcategory are no longer based upon the use of ion exchange technology. Specifically, under the proposed best practicable control technology currently available guidelines which required ion exchange it was estimated that 18-24 ammonium nitrate plants, representing 16-23 percent of that segment's production capacity, would be forced to shut down. A revised analysis, reflecting the proposed guidelines with ion exchange in this segment until 1983 and for new sources, shows a substantial decrease in the estimated economic impact. Assuming that the current ammonium nitrate fertilizer shortage continues at least into 1975, the resultant increased revenues coupled with this lower cost requirement for 1977 will maintain the economic viability of many of the most vulnerable ammonium nitrate plants.

The requirement for total recycle in the ammonium phosphate segment has been eliminated from the best practicable technology standards. As a result there will be a major reduction in projected treatment costs for 1977, and the potential for plant closures will decline. The economic analysis of the proposed guidelines indicated that 2-16 ammonium phosphate plants, accounting for 7-39 percent of the segment's capacity, are required to meet pollution control costs. A preliminary revision of the analysis based on the assumption that total recycle is no longer required indicates the plant closure estimate is now reduced to approximately 0 to 10 plants, representing 8 to 10 percent of the segment's production of phosphate. Plant closures would affect an estimated maximum of 200 jobs.

It is predicted that the phosphorus fertilizer segment as a whole faces overcapacity by 1975 due to new plant construction, assuming the export market does not expand significantly beyond present levels. Potential closures within the industry would likely take place in a period of oversupply, thus mitigating the effect of such closures on fertilizer phosphorus supply. Due to uncertainties in the analysis it is not possible to definitively delineate what portion of ammonium phosphate producers would close as the sole result of the 1977 requirements. However, it is felt that pollution control expenditures is one factor in any plant closure decision.

(d) Cost-benefit analysis. The detrimental effects of some constituents of waste waters discharged by point sources within the basic fertilizer chemicals segment of the fertilizer manufacturing point source category are discussed in Section VI. Entitled "Development Document for Effluent Limitations Guidelines for the Basic Fertilizer Chemicals Segment of the Fertilizer Manufacturing Point Source Category." It is not feasible to quantify in economic terms, particularly on a national basis, the costs resulting from the discharge of these pollutants to our Nation's waterways. Nevertheless, as indicated in Section VI, the pollutants discharged have substantial and damaging impacts on the quality of water and therefore on its capacity to support healthy populations of wildlife, fish and other aquatic wildlife and on its suitability for industrial, recreational and drinking water supply uses.

The total cost of implementing the effluent limitations guidelines includes the direct capital and operating costs of the pollution control technology employed to achieve compliance and the economic and environmental costs identified in Section VIII and in the supplementary report entitled "Economic Analysis of Proposed Effluent Limitations Guidelines for the Fertilizer Industry" (November 1973). Implementing the effluent limitations guidelines will substantially reduce the environmental harm which would otherwise be attributable to the discharge of polluted waste waters from existing and newly constructed plants in the fertilizer manufacturing industry. The Agency believes that the beneficially reducing the pollutants discharged justifies the associated costs which, though substantial in absolute terms, represent a relatively small percentage of the total capital investment in the industry.

(e) Solid waste control. Solid waste control must be considered. The waterborne wastes from the fertilizer manufacturing industry may contain a considerable volume of metals in various forms as a part of the suspended solids pollutant. Best practicable control technology and best available control technology as they are known today, require disposal of the pollutants removed from waste waters in this industry in the form of solid wastes and liquid concentrates. In some cases these nonhazardous substances require additional custodial care. However, some constituents may be hazardous and may require special consideration. In order to ensure long term protection of the environment from these hazardous or harmful constituents, special consideration of disposal sites must be made. All landfill sites where such hazardous wastes are disposed should be selected so as to prevent horizontal and vertical migration of these contaminants to ground or surface waters. In cases where geologic conditions may not reasonably ensure this, adequate precautions (e.g., impermeable liners) should be taken to ensure long term protection to the environment from hazardous materials. Where appropriate the location of solid hazardous materials disposal sites should be recorded in the appropriate office of the legal jurisdiction in which the site is located.

(i) Publication of information on processes, procedures, or other methods which result in the elimination or reduction of the discharge of pollutants. In conformance with the requirements of section 304(c) of the Act, a manual entitled "Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Basic Fertilizer Chemicals Segment of the Fertilizer Manufacturing Point Source Category" is being published and will be available for purchase from the Government Printing Office, Washington, D.C. 20401 for a nominal fee.

Dated: March 26, 1974.

RUSSELL E. TRAILL,
Administrator

PART 418—FERTILIZER MANUFACTURING POINT SOURCE CATEGORY

Subpart A—Phosphate Subcategory

418.10 Applicability; description of the phosphate subcategory.

418.11 Specialized definitions.

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

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

418.14 [Reserved]

418.15 Standards of performance for new sources.

418.16 Pretreatment standards for new sources.
Subpart A—Phosphate Subcategory

§ 418.10 Applicability; description of the phosphate subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of sulfuric acid by sulfur burning, wet process phosphoric acid, normal superphosphate, triple superphosphate and ammonium phosphate.

§ 418.11 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.
(b) The term 'impoundment,' for the purpose of calculating the volume of process waste water which may be discharged, shall mean the water surface area of the impoundment at maximum capacity.

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

In establishing the limitations set forth in this section, the Administrator shall take into account all information available: (a) To collect, develop and collate with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategory and effluent levels established. It is, however, that factors which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in the industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger an effluent limitation in the NPDES permit which is designed, constructed and operated so as to ensure the degree of reduction achievable by the application of the best available technology economically achievable for that month, or, if greater, a volume of process waste water equal to the difference between the mean precipitation for that month and the evaporation within the impoundment shall be no discharge of process waste water which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to the 10 year, 24 hour rainfall event, when such event occurs.
(c) During any calendar month there may be discharged from a process waste water impoundment either a volume of process waste water equal to the difference between the precipitation for that month and the evaporation within the impoundment and the mean evaporation for that month as established by the National Climatic Center, National Oceanic and Atmospheric Administration, for the area in which such impoundment is located (or as otherwise determined if no monthly data have been established by the National Climatic Center).

(d) Any process waste water discharged pursuant to paragraph (c) of this section shall comply with each of the following requirements:

<table>
<thead>
<tr>
<th>Effluent characteristics</th>
<th>Maximum for Average of daily values or 1 day maximum allowable for any 1 day</th>
<th>Exceedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total phosphorus (as P)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
<tr>
<td>Total nitrogen (as N)</td>
<td>70</td>
<td>25</td>
</tr>
</tbody>
</table>

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

The following limitations establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available: (a) Subject to the provisions of paragraphs (b), (c) and (d) of this section, there shall be no discharge of process waste water into navigable waters.
(b) A process waste water impoundment which is designed and operated so as to contain the precipitation from the 10 year, 24 hour rainfall event as established by the National Climatic Center, National Oceanic and Atmospheric Administration, for the area in which such impoundment is located may discharge that volume of process waste water which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to the 10 year, 24 hour rainfall event, when such event occurs.
§ 418.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and utilize with respect to such factors as general energy requirements and costs which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger which are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish the discharge limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

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

**Effluent characteristics**

- **Maximum allowed concentrations**
  - Ammonia (as N): 0.11 ppm (within the range of 0 to 0.025) in English units (parts per million, by weight, of product)
  - Ammonia (as N): 0.01 ppm (within the range of 0 to 0.005) in Metric units (kilograms per 1,000 kg of product)

**Standards for new sources**

- **Effluent limitations**
  - Minimum value for any 1 day: 0.025
  - Averaged for 30 consecutive days: shall not exceed

**Effluent limitations**

- **Maximum allowed concentrations**
  - Ammonia (as N): 0.11 ppm (within the range of 0 to 0.025)
  - Ammonia (as N): 0.01 ppm (within the range of 0 to 0.005)

**Standards for new sources**

- **Effluent limitations**
  - Minimum value for any 1 day: 0.025
  - Averaged for 30 consecutive days: shall not exceed

**Subpart B—Ammonia Subcategory**

**§ 418.20 Applicability; description of the ammonia subcategory.**

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

**§ 418.21 Specialized definitions.**

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) The term "product" shall mean the anhydrous ammonia content of the compound manufactured.
State shall establish for the discharger in the Regional Administrator of the Environmental Protection Agency. The approved limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

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

(a) The following limitations constitute the maximum permissible discharge for urea manufacturing operations in which urea is not prilled:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane units (CFU/1,000 kg of product)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Ammonia (as N) 0.075
- Organic nitrogen (as N) 0.075
- pH Within the range 6.0 to 9.0
- English units (gpm/1,000 lb of product) 0.075

(b) The following limitations constitute the maximum permissible discharge for urea manufacturing operations in which urea is prilled:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane units (CFU/1,000 kg of product)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Ammonia (as N) 0.075
- Organic nitrogen (as N) 0.075
- pH Within the range 6.0 to 9.0
- English units (gpm/1,000 lb of product) 0.075

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

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

(a) The following limitations constitute the maximum permissible discharge for urea manufacturing operations in which urea is not prilled:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane units (CFU/1,000 kg of product)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Ammonia (as N) 0.075
- Organic nitrogen (as N) 0.075
- pH Within the range 6.0 to 9.0
- English units (gpm/1,000 lb of product) 0.075

(b) The following limitations constitute the maximum permissible discharge for urea manufacturing operations in which urea is prilled:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane units (CFU/1,000 kg of product)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Ammonia (as N) 0.075
- Organic nitrogen (as N) 0.075
- pH Within the range 6.0 to 9.0
- English units (gpm/1,000 lb of product) 0.075
(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.025</td>
<td>0.075</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.075</td>
<td>0.22</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 9.0</td>
<td>2</td>
</tr>
<tr>
<td>Nitrite (as N)</td>
<td>0.11</td>
<td>0.25</td>
</tr>
</tbody>
</table>

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

(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.45 Effluent limitations specifying the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

(a) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.46 Effluent limitations specifying the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

(a) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.47 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.48 Effluent limitations specifying the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

(a) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.49 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.50 Effluent limitations specifying the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

(a) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

§ 418.51 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Metric units (kilograms per 1,000 kg of product)</th>
<th>English units (pounds per 1,000 lb of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia (as N)</td>
<td>0.015</td>
<td>0.045</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.045</td>
<td>0.116</td>
</tr>
<tr>
<td>pH</td>
<td>Within the range 6.0 to 8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
§ 418.44 Standards of performance for new sources.

The following standards of performance establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a new source subject to the provisions of this subpart:

(a) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is produced as an aqueous solution:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric units (kilograms per 1,000 lb of product)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia (as N)</td>
<td>0.025</td>
<td>0.25</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.05</td>
<td>0.50</td>
</tr>
</tbody>
</table>

(b) The following limitations constitute the maximum permissible discharge for ammonium nitrate manufacturing operations in which ammonium nitrate is prilled or granulated:

<table>
<thead>
<tr>
<th>Effluent characteristic</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric units (kilograms per 1,000 lb of product)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia (as N)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>0.125</td>
<td>0.125</td>
</tr>
</tbody>
</table>

In addition to the prohibitions set forth in 40 CFR 123.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works shall be the standard of performance for new sources specified in 40 CFR 418.45; provided that, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced in stringency for that pollutant.

Subpart E—Nitric Acid Subcategory

§ 418.50 Applicability; description of the nitric acid subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of nitric acid used as an intermediate product for the manufacture of fertilizer products or other intermediate products.

§ 418.51 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

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

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs which can affect the industry subcategory and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

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

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

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

§ 418.54 Standards of performance for new sources.

The following standards of performance establish the quantity or quality of pollutants or pollutant properties which may be discharged by a new source subject to the provisions of this subpart: There shall be no discharge of process wastewater into navigable waters.

§ 418.55 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act for a source within the nitric acid subcategory, which is a user of a publicly owned treatment works (and which would be a new source subject to section 307 of the Act, if it were to discharge pollutants to the navigable waters), shall be the standard set forth in 40 CFR Part 128, except that, for the purpose of this section, 40 CFR 128.133 shall be amended to read as follows:

In addition to the prohibitions set forth in 40 CFR 123.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works shall be as follows: There shall be no discharge of process wastewater pollutants.

[FR Doc. 74-7726 Filed 4-5-74; 9:45 am]