

# Chapter 11 Removal Credit Guidance

## Section A. Quick Reference Info

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1. **Definition** - The adjustment of Federal categorical standards for certain regulated pollutants to account for the removal of those pollutants provided by the publicly owned treatment works (POTW). Removal means a reduction in the amount of a pollutant in the POTW's effluent or alteration of the nature of a pollutant during treatment at the POTW. The reduction or alteration can be obtained by physical, chemical or biological means and may be the result of specifically designed POTW capabilities or may be incidental to the operation of the treatment system. Removal does not mean the dilution of a pollutant in the POTW.
2. **Acronyms:**
  - CIU - Categorical Industrial User
  - LTMP - Long Term Monitoring Plan
  - POTW - Publicly Owned Treatment Works
  - RCA - Removal Credit Application
  - SIUs - Significant Industrial Users
  - WWTP - Wastewater Treatment Plant
3. **Purpose:** To increase a categorical limit for an Categorical Industrial User to account for the pollutants removal in the POTW. This increased limit must not create pass-through, interference, sludge, or worker health problems.
4. **Regulatory References**
  - 40 CFR 403.7 Removal Credits
  - 40 CFR 403 Appendix G - Pollutants available for Removal Credit
  - 15A NCAC 2H .0921
5. **DEM Requirement**
  - RCAs must be approved by the Division prior to granting removal credits to any users.
  - The RCA must be sent for public notice in the largest daily newspaper in the service area.
  - RCAs must comply with the instructions of this Chapter.
  - After RCAs are granted, requirements will be added to the NPDES permit, requiring monthly influent and effluent flow-proportional sampling and a yearly "consistent removal" report.
6. **Implementation Frequency**
  - RCAs may be sent to the DEM Pretreatment Group for consideration at anytime by a delegated pretreatment program POTW. RCAs may not be filed directly by the industry, but the industry may assist the POTW with financial aid, clerical help or technical support.
7. **Appendices**
  - 11-A, 40 CFR 403.7
  - 11-B, Model Removal Credit Summary Form
  - 11-C, Typical NPDES Removal Credit Language



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## Section B. Discussion

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Removal Credits only apply to national categorical standards. Removal credits increase the amount of a pollutant that CIU's can discharge to a POTW and still be in compliance with such standards.

The rationale for removal credits is that, if a pollutant must be pretreated to meet a national standard applicable to discharges to all POTWs, unnecessary treatment would occur if a pollutant is adequately treated by a POTW. Removal credits prevent such unnecessary treatment by taking in to account the percentage of a pollutant consistently removed by a POTW.

For example, if an applicable categorical standard allowed an CIU to discharge one unit per day of a pollutant and the POTW to which it discharges could consistently remove 50% of that pollutant in the wastestream, the SIU could potentially be authorized to discharge two units of the pollutant. Once the SIU's effluent is treated by the POTW, the facility will have in effect discharged one unit to the receiving water and have complied with the categorical standard.

Applications for authorization to give removal credits ( or modify existing ones) shall be submitted by the POTW to the Division. The application will be reviewed by the Division and may be reviewed by EPA prior to authorization. Upon approval from the Division to grant removal credits, the POTW has the discretion to extend to SIUs any removal credit that does not exceed the approved removal credit.

## Section C. Removal Credit Pollutant Availability

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The February 19, 1993 amendments to the removal credit regulations at 40 CFR 403.7 (Appendix 11-A) lists three categories of pollutants for which removal credits may be made available:

- Appendix G-I lists the pollutants available for three different sludge use and disposal options. POTW's that incinerate their sludge may also apply for any of the pollutants listed in footnote (1) to Appendix G-I.
- Appendix G-II lists pollutants available provided that the pollutants' concentration in the POTW's sewage sludge does not exceed the listed levels.
- All pollutants are available for POTWs with sludge disposed in a Municipal Solid Waste Landfill, as defined by 40 CFR 258.



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## Section D. Application Requirements

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Removal Credit Applications must answer several questions, including:

- Which pollutants are removal credits being applied for, for which CIU's, and what are the revised IUP discharge limits?
  - What is the "consistent removal rate"?
  - Can you certify that the granting of removal credits will not cause a violation of sludge, NPDES, or worker health standards?
  - What are the public issues about the granting of the removal credits?
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- **Which pollutants are removal credits being applied for, for which CIU's and what are the revised discharge limits?**

To indicate which pollutants removal credits are being applied for and what the revised discharge limits are, draft revised permit limits and a permit synopsis for the revised limits must be included in the submission. A Generic Blank IUP limits page is provided in Appendix 6-B, and Generic Blank IUP synopsis is provided in Appendix 6-C. In addition to the standard synopsis items, the calculations for revised limits must be listed in the synopsis submission. If at a later time the POTW decides to grant the removal credit to another categorical industry, then it must have approval from the Division prior to permit issuance.

- Revised limits calculations shall be indicated in the synopsis. Revised discharge limits for a specific pollutant shall be derived by use of the following formula:

$$y = x / (1 - \text{CRR})$$

where

CRR = Consistent Removal Rate, as a decimal

x = pollutant categorical pretreatment discharge limit

y = revised pollutant discharge limit  
(same units as x)

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### • What is the "consistent removal rate"?

In 40 CFR 403.7 (b) requirements for consistent removal rate are specified. These requirements include data requirements, and analysis requirements. A model removal credit summary form is provided in Appendix 11-B.

The data requirements for RCA to the Division are as follows:

- a. Monthly data or 3 consecutive days per quarter data for influent and effluent, (minimum of 12 sampling events);
- b. Effluent and Influent Flow must be measured;
- c. 24 Hour Flow proportional composite samples or demonstrated equivalent are required, where appropriate, and these daily paired samples may or may not be delayed to account for hydraulic detention, dependent upon the POTW's choice;
- d. Grab samples must be taken to account for WWTP hydraulic detention time;
- e. Pollutant detection levels sufficient to measure the influent and effluent concentrations should be used, and at a maximum the detection levels used for the LTMP;
- f. Analytical methods of 40 CFR 136 and State certified lab; and
- g. Historical and LTMP data may be used if it meets the requirements (a. through f. above).

The evaluation requirements for RCA to the Division are as follows:

- a. All data taken in the last 12 month period must be used;
- b. If the pollutant is measurable in the influent but not in the effluent, the effluent level is assumed to be the limit of measurement, i.e. the detection limit;
- c. If the pollutant is not measurable in the influent, then the data from that date may not be used; and
- d. "Consistent Removal" shall mean the average of the lowest 50 percent of the daily paired removal rates.
  - I. Where the number of samples with concentrations equal to or above the limit of measurement is 8 to 12, the average of the lowest 6 values shall be used;
  - II. Where there are fewer than 8 samples with concentrations equal to or above the limit of measurement, the average of all values shall be used.

The RCA removal rate calculations must account for the differences in influent and effluent flow, and is defined by the following formula.

$$RR = (C_I Q_I - C_E Q_E) / C_I Q_I$$

where

- RR = removal rate, as a decimal  
C<sub>I</sub> = influent concentration, mg/l  
C<sub>E</sub> = effluent concentration, mg/l  
Q<sub>I</sub> = influent flow, MGD  
Q<sub>E</sub> = effluent flow, MGD

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- **Can you certify that granting of removal credits will not cause a violation of sludge, NPDES, or worker health standards?**

The RCA must include support documentation and certification indicating that granting the removal credits will not cause a violation of sludge, NPDES, or worker health standards. The support documentation must include a revised allocation table and the maximum potential sludge loading increase. Organics headworks analysis and corresponding organics allocation table must also be included in the support documentation for organic pollutants removal credit applications.

Allocation tables and organics headworks analysis are discussed in Chapters 6 and 4 of the *Comprehensive Guidance for North Carolina Pretreatment Programs*. The potential sludge loading increase can be demonstrated by calculating the pounds of pollutant potentially being added to the sludge:

$$C_{SLPRE} = C_{SLMAX} * L_{UNC} * (L_{RCAT} - L_{PREAT}) / (L_{PREAT} + L_{UNC})$$

where

- $C_{SLPRE}$  = Concentration of sludge predicted, (mg/kg)
- $C_{SLMAX}$  = Concentration of sludge (Maximum) from the previous year's sludge data, (mg/kg)
- $L_{RCAT}$  = Industrial Pollutant Loading after Removal Credits Granted per the revised Allocation Table, (pounds/day)
- $L_{PREAT}$  = Industrial Pollutant Loading before Removal Credits Granted per the previous Allocation Table, (pounds/day)
- $L_{UNC}$  = Uncontrollable Loading from HWA or AT, (pounds/day)

The concentration of sludge predicted must be less than the sludge ceiling concentration criteria for the pollutant in order for the RCA to be approved by the Division. It must be noted that this calculation assumes the worst case condition where all of the additional pollutant loading is removed to the sludge and is not discharged to the stream.

At the end of the support documentation, an NPDES, Sludge and Worker Health compliance certification is required. An example certification is provided on the next page:

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**Compliance Certification**

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"I certify, based upon my personal knowledge of the above support documentation that after categorical regulations are revised, that Typicalville will continue to achieve compliance with all NPDES permit limits and conditions, applicable sludge disposal regulations, and worker Short Term Exposure Levels for air contaminants."

*Joe Enforcement*

Joe Enforcement  
Pretreatment Coordinator  
City of Typicalville

In addition to reviewing the technical support documentation supplied above, the Division will also review NPDES conventional and non-conventional pollutant compliance data, NPDES Whole Effluent Toxicity Testing data, and sludge data prior to approving the RCA. If it is determined that a reasonable potential exists for the Removal Credit to create POTW compliance problems or POTW worker health problems, then the RCA will not be approved.



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- **What are the public issues about the granting of the removal credits?**

In accordance with 40 CFR 403.11(B) the POTW must publish a public notice of the removal credit application in the largest daily newspaper serving the POTW's jurisdiction. A copy of the published public notice must be included in the application.

An example public notice is shown below:

### PUBLIC NOTICE

The City of Metropolis in accordance with Federal and State Regulations is hereby giving notice of a removal credit application to the North Carolina Division of Environmental Management Pretreatment Group for the following pollutant removal efficiencies:

| Pollutant | Removal Efficiency (%) |
|-----------|------------------------|
| Copper    | 10                     |
| Lead      | 22                     |

Within 30 days, questions and comments concerning this notice should be addressed to the State Water Quality Pretreatment Group Supervisor at DEHNR/DEM, P.O. Box 29535, Raleigh, North Carolina 27626 or by phone at (919)733-5083.

The State will consider the comments made when reviewing the RCA, will schedule a public hearing if necessary, and provide written responses to comments where appropriate.

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### • The Complete Application Package

In summary, a complete application package must contain the following:

- Draft revised CIU permit limits,
- Permit synopsis for the revised limits, with calculations for the revised limits,
- Removal credit summary similar to model in Appendix 4-B with explanation that data was obtained as required for RCA's,
- Revised allocation table,
- Certification that granting removal credits will not create problems, and
- A copy of the published public notice.

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### **Section E. Removal Credit Continuing Requirements**

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After the RCA is approved, the POTW's NPDES permit will be modified to require an annual report of the continuance of the "consistent removal rate". An example of the typical NPDES Removal Credit Language is provided in Appendix 11-C. The annual removal credit report required shall be included as an Appendix to the POTW's Pretreatment Annual Report and shall consist of removal credit summary forms. A model removal credit summary form is provided in Appendix 11-B. The annual removal credit report data requirements and analysis requirements are the same as the requirements for the initial RCA, including the 12 sampling events per year.

It must be noted that the Approval Authority may modify or withdraw approval of the removal credits in accordance with 40 CFR 403.7 (f) (4).



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### Appendix 11-A. 40 CFR 403.7

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#### §403.7 Removal credits.

(a) *Introduction--(1) Definitions.* For the purpose of this section:

(i) "Removal" means a reduction in the amount of a pollutant in the POTW's effluent or alteration of the nature of a pollutant during treatment at the POTW. The reduction or alteration can be obtained by physical, chemical or biological means and may be the result of specifically designed POTW capabilities or may be incidental to the operation of the treatment system. Removal as used in this subpart shall not mean dilution of a pollutant in the POTW.

(ii) *Sludge Requirements* shall mean the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act; the Solid Waste Disposal Act (SWDA) (including Title II more commonly referred to as the Resource Conservation Recovery Act (RCRA) and State regulations contained in any State sludge management plan prepared pursuant to subtitle D of SWDA); the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection, Research and Sanctuaries Act.

(2) *General.* Any POTW receiving wastes from an Industrial User to which a categorical Pretreatment Standard(s) applies may, at its discretion and subject to the conditions of this section, grant removal credits to reflect removal by the POTW of pollutants specified in the categorical Pretreatment Standard(s). The POTW may grant a removal credit equal to or, at its discretion, less than its consistent removal rate. Upon being granted a removal credit, each affected Industrial User shall calculate its revised discharge limits in accordance with paragraph (a)(4) of this section. Removal credits may only be given for indicator or surrogate pollutants regulated in a categorical Pretreatment Standard if the categorical Pretreatment Standard so specifies.

(3) *Conditions for authorization to give removal credits.* A POTW is authorized to give removal credits only if the following conditions are met:

(i) *Application.* The POTW applies for, and receives, authorization from the Approval Authority to give a removal credit in accordance with the requirements and procedures specified in paragraph (e) of this section.

(ii) *Consistent removal determination.* The POTW demonstrates and continues to achieve consistent removal of the pollutant in accordance with paragraph (b) of this section.

(iii) *POTW local pretreatment program.* The POTW has an approved pretreatment program in accordance with and to the extent required by part 403; provided, however, a POTW which does not have an approved pretreatment program may, pending approval of such a program, conditionally give credits as provided in paragraph (d) of this section.

(iv) *Sludge requirements.* The granting of removal credits will not cause the POTW to violate the local, State and Federal Sludge Requirements which apply to the sludge management method chosen by the POTW. Alternatively, the POTW can demonstrate to the Approval Authority that even though it is not presently in compliance with applicable Sludge Requirements, it will be in compliance when the Industrial User(s) to whom the removal credit would apply is required to meet its categorical Pretreatment Standard(s) as modified by the removal credit. If granting removal credits forces a POTW to incur greater sludge management costs than would be incurred in the absence of granting removal credits, the additional sludge management costs will not be eligible for EPA grant assistance. Removal credits may be made available for the following pollutants.

(A) For any pollutant listed in appendix G section I of this part for the use or disposal practice employed by the POTW, when the requirements in 40 CFR part 503 for that practice are met.

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(B) For any pollutant listed in appendix G section II of this part for the use or disposal practice employed by the POTW when the concentration for a pollutant listed in appendix G section II of this part in the sewage sludge that is used or disposed does not exceed the concentration for the pollutant in appendix G section II of this part.

(C) For any pollutant in sewage sludge when the POTW disposes all of its sewage sludge in a municipal solid waste landfill unit that meets the criteria in 40 CFR part 258. [§403.7(a)(3)(iv) Revised at 58 FR 9386, Feb. 19, 1993]

(v) *NPDES permit limitations.* The granting of removal credits will not cause a violation of the POTW's permit limitations or conditions. Alternatively, the POTW can demonstrate to the Approval Authority that even though it is not presently in compliance with applicable limitations and conditions in its NPDES permit, it will be in compliance when the Industrial User(s) to whom the removal credit would apply is required to meet its categorical Pretreatment Standard(s), as modified by the removal credit provision.

(4) *Calculation of revised discharge limits.* Revised discharge limits for a specific pollutant shall be derived by use of the following formula:

$$y = x/(1-r)$$

where:

x=pollutant discharge limit specified in the applicable categorical Pretreatment Standard  
r=removal credit for that pollutant as established under paragraph (b) of this section (percentage removal expressed as a proportion, i.e., a number between 0 and 1)  
y=revised discharge limit for the specified pollutant (expressed in same units as x)

(b) *Establishment of Removal Credits; Demonstration of Consistent Removal--(1) Definition of Consistent Removal.* "Consistent Removal" shall mean the average of the lowest 50 percent of the removal measured according to paragraph (b)(2) of this section. All sample data obtained for the measured pollutant during the time period prescribed in paragraph (b)(2) of this section must be reported and used in computing Consistent Removal. If a substance is measurable in the influent but not in the effluent, the effluent level may be assumed to be the limit of measurement, and those data may be used by the POTW at its discretion and subject to approval by the Approval Authority. If the substance is not measurable in the influent, the data may not be used. Where the number of samples with concentrations equal to or above the limit of measurement is between 8 and 12, the average of the lowest 6 removals shall be used. If there are less than 8 samples with concentrations equal to or above the limit of measurement, the Approval Authority may approve alternate means for demonstrating Consistent Removal. The term "measurement" refers to the ability of the analytical method or protocol to quantify as well as identify the presence of the substance in question.

(2) *Consistent Removal Data.* Influent and effluent operational data demonstrating Consistent Removal or other information, as provided for in paragraph (b)(1) of this section, which demonstrates Consistent Removal of the pollutants for which discharge limit revisions are proposed. This data shall meet the following requirements:

(i) *Representative Data; Seasonal.* The data shall be representative of yearly and seasonal conditions to which the POTW is subjected for each pollutant for which a discharge limit revision is proposed.

(ii) *Representative Data; Quality and Quantity.* The data shall be representative of the quality and quantity of normal effluent and influent flow if such data can be obtained. If such data are unobtainable, alternate data or information may be presented for approval to demonstrate Consistent Removal as provided for in paragraph (b)(1) of this section.

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(iii) *Sampling Procedures: Composite.* (A) The influent and effluent operational data shall be obtained through 24-hour flow-proportional composite samples. Sampling may be done manually or automatically, and discretely or continuously. For discrete sampling, at least 12 aliquots shall be composited. Discrete sampling may be flow-proportioned either by varying the time interval between each aliquot or the volume of each aliquot. All composites must be flow-proportional to each stream flow at time of collection of influent aliquot or to the total influent flow since the previous influent aliquot. Volatile pollutant aliquots must be combined in the laboratory immediately before analysis.

(B)(1) Twelve samples shall be taken at approximately equal intervals throughout one full year. Sampling must be evenly distributed over the days of the week so as to include no-workdays as well as workdays. If the Approval Authority determines that this schedule will not be most representative of the actual operation of the POTW Treatment Plant, an alternative sampling schedule will be approved.

(2) In addition, upon the Approval Authority's concurrence, a POTW may utilize an historical data base amassed prior to the effective date of this section provide that such data otherwise meet the requirements of this paragraph. In order for the historical data base to be approved it must present a statistically valid description of daily, weekly and seasonal sewage treatment plant loadings and performance for at least one year.

(C) Effluent sample collection need not be delayed to compensate for hydraulic detention unless the POTW elects to include detention time compensation or unless the Approval Authority requires detention time compensation. The Approval Authority may require that each effluent sample be taken approximately one detention time later than the corresponding influent sample when failure to do so would result in an unrepresentative portrayal of actual POTW operation. The detention period is to be based on a 24-hour average daily flow value. The average daily flow used will be based upon the average of the daily flows during the same month of the previous year.

(iv) *Sampling Procedures: Grab.* Where composite sampling is not an appropriate sampling technique, a grab sample(s) shall be taken to obtain influent and effluent operational data. Collection of influent grab samples should precede collection of effluent samples by approximately one detention period. The detention period is to be based on a 24-hour average daily flow value. The average daily flow used will be based upon the average of the daily flows during the same month of the previous year. Grab samples will be required, for example, where the parameters being evaluated are those, such as cyanide and phenol, which may not be held for any extended period because of biological, chemical or physical interactions which take place after sample collection and affect the results. A grab sample is an individual sample collected over a period of time not exceeding 15 minutes.

(v) *Analytical methods.* The sampling referred to in paragraphs (b)(2) (i) through (iv) of this section and an analysis of these samples shall be performed in accordance with the techniques prescribed in 40 CFR part 136 and amendments thereto. Where 40 CFR part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the Administrator determines that the part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analysis shall be performed using validated analytical methods or any other applicable sampling and analytical procedures, including procedures suggested by the POTW or other parties, approved by the Administrator.

(vi) *Calculation of removal.* All data acquired under the provisions of this section must be submitted to the Approval Authority. Removal for a specific pollutant shall be determined either, for each sample, by measuring the difference between the concentrations of the pollutant in the influent and effluent of the POTW and expressing the difference as a

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percent of the influent concentration, or, where such data cannot be obtained, Removal may be demonstrated using other data or procedures subject to concurrence by the Approval Authority as provided for in paragraph (b)(1) of this section.

(c) *Provisional credits.* For pollutants which are not being discharged currently (i.e., new or modified facilities, or production changes) the POTW may apply for authorization to give removal credits prior to the initial discharge of the pollutant. Consistent removal shall be based provisionally on data from treatability studies or demonstrated removal at other treatment facilities where the quality and quantity of influent are similar. Within 18 months after the commencement of discharge of pollutants in question, consistent removal must be demonstrated pursuant to the requirements of paragraph (b) of this section. If, within 18 months after the commencement of the discharge of the pollutant in question, the POTW cannot demonstrate consistent removal pursuant to the requirements of paragraph (b) of this section, the authority to grant provisional removal credits shall be terminated by the Approval Authority and all Industrial Users to whom the revised discharge limits had been applied shall achieve compliance with the applicable categorical Pretreatment Standard(s) within a reasonable time, not to exceed the period of time prescribed in the applicable categorical Pretreatment Standard(s), as may be specified by the Approval Authority.

(d) *Exception to POTW Pretreatment Program Requirement.* A POTW required to develop a local pretreatment program by §403.8 may conditionally give removal credits pending approval of such a program in accordance with the following terms and conditions:

(1) All Industrial Users who are currently subject to a categorical Pretreatment Standard and who wish conditionally to receive a removal credit must submit to the POTW the information required in §403.12(b)(1) through (7) (except new or modified industrial users must only submit the information required by §403.12(b)(1) through (6)), pertaining to the categorical Pretreatment Standard as modified by the removal credit. The Industrial Users shall indicate what additional technology, if any, will be needed to comply with the categorical Pretreatment Standard(s) as modified by the removal credit;

(2) The POTW must have submitted to the Approval Authority an application for pretreatment program approval meeting the requirements of §§403.8 and 403.9 in a timely manner, not to exceed the time limitation set forth in a compliance schedule for development of a pretreatment program included in the POTW's NPDES permit, but in no case later than July 1, 1983, where no permit deadline exists;

(3) The POTW must:

(i) Compile and submit data demonstrating its consistent removal in accordance with paragraph (b) of this section;

(ii) Comply with the conditions specified in paragraph (a)(3) of this section; and

(iii) Submit a complete application for removal credit authority in accordance with paragraph (e) of this section;

(4) If a POTW receives authority to grant conditional removal credits and the Approval Authority subsequently makes a final determination, after appropriate notice, that the POTW failed to comply with the conditions in paragraphs (d)(2) and (3) of this section, the authority to grant conditional removal credits shall be terminated by the Approval Authority and all industrial Users to whom the revised discharge limits had been applied shall achieve compliance with the applicable categorical Pretreatment Standard(s) within a reasonable time, not to exceed the period of time prescribed in the applicable categorical Pretreatment Standard(s), as may be specified by the Approval Authority.

(5) If a POTW grants conditional removal credits and the POTW or the Approval Authority subsequently makes a final determination, after appropriate notice, that the Industrial User(s) failed to comply with the conditions in paragraph (d)(1) of this section,



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the conditional credit shall be terminated by the POTW or the Approval Authority for the non-complying Industrial User(s) and the Industrial User(s) to whom the revised discharge limits had been applied shall achieve compliance with the applicable categorical Pretreatment Standard(s) within a reasonable time, not to exceed the period of time prescribed in the applicable categorical Pretreatment Standard(s), as may be specified by the Approval Authority. The conditional credit shall not be terminated where a violation of the provisions of this paragraph results from causes entirely outside of the control of the Industrial User(s) or the Industrial User(s) had demonstrated substantial compliance.

(6) The Approval Authority may elect not to review an application for conditional removal credit authority upon receipt of such application, in which case the conditionally revised discharge limits will remain in effect until reviewed by the Approval Authority. This review may occur at any time in accordance with the procedures of §403.11, but in no event later than the time of any pretreatment program approval or any NPDES permit reissuance thereunder.

(e) *POTW application for authorization to give removal credits and Approval Authority review--*(1) *Who must apply.* Any POTW that wants to give a removal credit must apply for authorization from the Approval Authority.

(2) *To whom application is made.* An application for authorization to give removal credits (or modify existing ones) shall be submitted by the POTW to the Approval Authority.

(3) *When to apply.* A POTW may apply for authorization to give or modify removal credits at any time.

(4) *Contents of the Application.* An application for authorization to give removal credits must be supported by the following information:

(i) *List of pollutants.* A list of pollutants for which removal credits are proposed.

(ii) *Consistent Removal Data.* The data required pursuant to paragraph (b) of this section.

(iii) *Calculation of revised discharge limits.* Proposed revised discharge limits for each affected subcategory of Industrial Users calculated in accordance with paragraph (a)(4) of this section.

(iv) *Local Pretreatment Program Certification.* A certification that the POTW has an approved local pretreatment program or qualifies for the exception to this requirement found at paragraph (d) of this section.

(v) *Sludge Management Certification.* A specific description of the POTW's current methods of using or disposing of its sludge and a certification that the granting of removal credits will not cause a violation of the sludge requirements identified in paragraph (a)(3)(iv) of this section.

(vi) *NPDES Permit Limit Certification.* A certification that the granting of removal credits will not cause a violation of the POTW's NPDES permit limits and conditions as required in paragraph (a)(3)(v) of this section.

(5) *Approval Authority Review.* The Approval Authority shall review the POTW's application for authorization to give or modify removal credits in accordance with the procedures of §403.11 and shall, in no event, have more that 180 days from public notice of an application to complete review.

(6) *EPA review of State removal credit approvals.* Where the NPDES State has an approved pretreatment program, the Regional Administrator may agree in the Memorandum of Agreement under 40 CFR 123.24(d) to waive the right to review and object to submissions for authority to grant removal credits. Such an agreement shall not restrict the Regional Administrator's right to comment upon or object to permits issued to POTW's except to the extent 40 CFR 123.24(d) allows such restriction.

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(7) Nothing in these regulations precludes an Industrial User or other interested party from assisting the POTW in preparing and presenting the information necessary to apply for authorization.

*(f) Continuation and withdrawal of authorization--(1) Effect of authorization.*

(i) Once a POTW has received authorization to grant removal credits for a particular pollutant regulated in a categorical Pretreatment Standard it may automatically extend that removal credit to the same pollutant when it is regulated in other categorical standards, unless granting the removal credit will cause the POTW to violate the sludge requirements identified in paragraph (a)(3)(iv) of this section or its NPDES permit limits and conditions as required by paragraph (a)(3)(v) of this section. If a POTW elects at a later time to extend removal credits to a certain categorical Pretreatment Standard, industrial subcategory or one or more Industrial Users that initially were not granted removal credits, it must notify the Approval Authority.

*(2) Inclusion in POTW permit.* Once authority is granted, the removal credits shall be included in the POTW's NPDES Permit as soon as possible and shall become an enforceable requirement of the POTW's NPDES permit. The removal credits will remain in effect for the term of the POTW's NPDES permit, provided the POTW maintains compliance with the conditions specified in paragraph (f)(4) of this section.

*(3) Compliance monitoring.* Following authorization to give removal credits, a POTW shall continue to monitor and report on (at such intervals as may be specified by the Approval Authority, but in no case less than once per year) the POTW's removal capabilities. A minimum of one representative sample per month during the reporting period is required, and all sampling data must be included in the POTW's compliance report.

*(4) Modification or withdrawal of removal credits--(i) Notice of POTW.* The Approval Authority shall notify the POTW if, on the basis of pollutant removal capability reports received pursuant to paragraph (f)(3) of this section or other relevant information available to it, the Approval Authority determines:

(A) That one or more of the discharge limit revisions made by the POTW, of the POTW itself, no longer meets the requirements of this section, or

(B) That such discharge limit revisions are causing a violation of any conditions or limits contained in the POTW's NPDES Permit.

*(ii) Corrective action.* If appropriate corrective action is not taken within a reasonable time, not to exceed 60 days unless the POTW or the affected Industrial Users demonstrate that a longer time period is reasonably necessary to undertake the appropriate corrective action, the Approval Authority shall either withdraw such discharge limits or require modifications in the revised discharge limits.

*(iii) Public notice of withdrawal or modification.* The Approval Authority shall not withdraw or modify revised discharge limits unless it shall first have notified the POTW and all Industrial Users to whom revised discharge limits have been applied, and made public, in writing, the reasons for such withdrawal or modification, and an opportunity is provided for a hearing. Following such notice and withdrawal or modification, all Industrial Users to whom revised discharge limits had been applied, shall be subject to the modified discharge limits or the discharge limits prescribed in the applicable categorical Pretreatment Standards, as appropriate, and shall achieve compliance with such limits within a reasonable time (not to exceed the period of time prescribed in the applicable categorical Pretreatment Standard(s) as may be specified by the Approval Authority.

*(g) Removal credits in State-run pretreatment programs under §403.10(e).* Where an NPDES State with an approved pretreatment program elects to implement a local pretreatment program in lieu or requiring the POTW to develop such a program (as

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provided in §403.10(e)), the POTW will not be required to develop a pretreatment program as a precondition to obtaining authorization to give removal credits. The POTW will, however, be required to comply with the other conditions of paragraph (a)(3) of this section.

(h) *Compensation for overflow.* "Overflow" means the intentional or unintentional diversion of flow from the POTW before the POTW Treatment Plant. POTWs which at least once annually Overflow untreated wastewater to receiving waters may claim Consistent Removal of a pollutant only by complying with either paragraph (h)(1) of (h)(2) or this section. However, this subsection shall not apply where Industrial User(s) can demonstrate that Overflow does not occur between the Industrial User(s) and the POTW Treatment Plant;

(1) The Industrial User provides containment or otherwise ceases or reduces Discharges from the regulated processes which contain the pollutant for which an allowance is requested during all circumstances in which an Overflow event can reasonably be expected to occur at the POTW or at a sewer to which the Industrial User is connected. Discharges must cease or be reduced, or pretreatment must be increased, to the extent necessary to compensate for the removal not being provided by the POTW. Allowances under this provision will only be granted where the POTW submits to the Approval Authority evidence that:

(i) All Industrial Users to which the POTW proposes to apply this provision have demonstrated the ability to contain or otherwise cease or reduce, during circumstances in which an Overflow event can reasonably be expected to occur, Discharges from the regulated processes which contain pollutants for which an allowance is requested;

(ii) The POTW has identified circumstances in which an Overflow event can reasonably be expected to occur, and has a notification or other viable plan to insure that Industrial Users will learn of an impending Overflow in sufficient time to contain, cease or reduce Discharging to prevent untreated Overflows from occurring. The POTW must also demonstrate that it will monitor and verify the data required in paragraph (h)(1)(iii) of this section, to insure that Industrial Users are containing, ceasing or reducing operations during POTW System Overflow; and

(iii) All Industrial Users to which the POTW proposes to apply this provision have demonstrated the ability and commitment to collect and make available, upon request by the POTW, State Director or EPA Regional Administrator, daily flow reports or other data sufficient to demonstrate that all Discharges from regulated processes containing the pollutant for which the allowance is requested were contained, reduced or otherwise ceased, as appropriate, during all circumstances in which an Overflow event was reasonably expected to occur; or

(2)(i) The Consistent Removal claimed is reduced pursuant to the following equation:

$$r_c = r_m * [(8760 - Z) / 8760]$$

Where:

$r_m$  = POTW's Consistent Removal rate for that pollutant as established under paragraphs (a)(1) and (b)(2) of this section

$r_c$  = removal corrected by the Overflow factor

Z = hours per year that Overflow occurred between the Industrial User(s) and the POTW Treatment Plant, the hours either to be shown in the POTW's current NPDES permit application or the hours, as demonstrated by verifiable techniques, that a particular Industrial User's Discharge Overflows between the Industrial User and the POTW

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Treatment Plant; and

(ii) After July 1, 1983, Consistent Removal may be claimed only where efforts to correct the conditions resulting in untreated Discharges by the POTW are underway in accordance with the policy and procedures set forth in "PRM 75-34" or "Program Guidance Memorandum-61" (same document) published on December 16, 1975, by EPA Office of Water Program Operations (WH-546). (See Appendix A.) Revisions to discharge limits in categorical Pretreatment Standards may not be made where efforts have not been committed to by the POTW to minimize pollution from Overflows. At minimum, by July 1, 1983, the POTW must have completed the analysis required by PRM 75-34 and be making an effort to implement the plan.

(iii) If, by July 1, 1983, a POTW has begun the PRM 75-34 analysis but due to circumstances beyond its control has not completed it, Consistent Removal, subject to the approval of the Approval Authority, may continue to be claimed according to the formula in paragraph (h)(2)(i) of this section as long as the POTW acts in a timely fashion to complete the analysis and makes an effort to implement the non-structural cost-effective measures identified by the analysis; and so long as the POTW has expressed its willingness to apply, after completing the analysis, for a construction grant necessary to implement any other cost-effective Overflow controls identified in the analysis should Federal funds become available, so applies for such funds, and proceeds with the required construction in an expeditious manner. In addition, Consistent Removal may, subject to the approval of the Approval Authority, continue to be claimed according to the formula in paragraph (h)(2)(i) of this section where the POTW has completed and the Approval Authority has accepted the analysis required by PRM 75-34 and the POTW has requested inclusion in its NPDES permit of an acceptable compliance schedule providing for timely implementation of cost-effective measures identified in the analysis. (In considering what is timely implementation, the Approval Authority shall consider the availability of funds, cost of control measures, and seriousness of the water quality problem.)

(Information collection requirements are approved by the Office of Management and Budget under control number 2040-0009)

[<§403.7 amended at 58 FR 18015, April 7, 1993]

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### Appendix G to Part 403--Pollutants Eligible for a Removal Credit

#### I. Regulated Pollutants in Part 503 Eligible for a Removal Credit

| Pollutants         | Use or disposal practice |    |      |
|--------------------|--------------------------|----|------|
|                    | LA                       | SD | I    |
| Arsenic            | X                        | X  | X    |
| Beryllium          |                          |    | X    |
| Cadmium            | X                        |    | X    |
| Chromium           | X                        | X  | X    |
| Copper             | X                        |    |      |
| Lead               | X                        |    | X    |
| Mercury            | X                        |    | X    |
| Molybdenum         | X                        |    |      |
| Nickel             | X                        | X  | X    |
| Selenium           | X                        |    |      |
| Zinc               | X                        |    |      |
| Total hydrocarbons |                          |    | X(1) |

Key: LA--land application, SD--surface disposal site without a liner and leachate collection system, I--firing of sewage sludge in a sewage sludge incinerator.

(1) The following organic pollutants are eligible for a removal credit if the requirements for total hydrocarbons in subpart E in 40 CFR part 503 are met when sewage sludge is fired in a sewage sludge incinerator: Acrylonitrile, Aldrin/Dieldrin (total), Benzene, Benzidine, Benzo(a)pyrene, Bis(2-chloroethyl)ether, Bis(2-ethylhexyl)phthalate, Bromodichloromethane, Bromoethane, Bromoform, Carbon tetrachloride, Chlordane, Chloroform, Chloromethane, DDD,DDE,DDT, Dibromochloromethane, Dibutyl phthalate, 1,2-dichloroethane, 1,1-dichloroethylene, 2,4-dichlorophenol 1,3-dichloropropene, Diethyl phthalate, 2,4-dinitrophenol, 1,2-diphenylhydrazine, Di-n-butyl phthalate, Endosulfan, Endrin, Ethylbenzene, Heptachlor, Heptachlor epoxide, Hexachlorobutadiene, Alpha-hexachlorocyclohexane, Betahexachlorocyclohexane, Hexachlorocyclopentadiene, Hexachloroethane, Hydrogen cyanide, Isophorone, Lindane, Methylene chloride, Nitrobenzene, N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine, Pentachlorophenol, Phenol, Polychlorinated biphenyls, 2,3,7,8-tetrachlorodibenzo-p-dioxin, 1,1,2,2-tetrachloroethane, Tetrachloroethylene, Toluene, Toxaphene, Trichloroethylene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, and 2,4,6-Trichlorophenol.

#### II. Additional Pollutants Eligible for a Removal Credit (milligrams per kilogram--dry weight basis)

| Pollutant               | Use or disposal practice |                      |                    |   |
|-------------------------|--------------------------|----------------------|--------------------|---|
|                         | LA                       | (SD)                 |                    | I |
|                         |                          | Unlined <sup>1</sup> | Lined <sup>2</sup> |   |
| Arsenic                 |                          |                      | 3100               |   |
| Aldrin/Dieldrin (Total) | 2.7                      |                      |                    |   |
| Benzene                 | 316                      | 140                  | 3400               |   |

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| Pollutant                       | Use or disposal practice |                      |                    |      |
|---------------------------------|--------------------------|----------------------|--------------------|------|
|                                 | LA                       | (SD)                 |                    | I    |
|                                 |                          | Unlined <sup>1</sup> | Lined <sup>2</sup> |      |
| Benzo(a)pyrene                  | 15                       | 3100                 | 3100               | 1400 |
| Bis(2-ethylhexyl)phthalate      |                          | 3100                 | 100                |      |
| Cadmium                         |                          | 3100                 | 3100               |      |
| Chlordane                       | 86                       | 3100                 | 3100               |      |
| Chromium                        |                          |                      | 3100               |      |
| Copper                          |                          | 346                  | 3100               |      |
| DDD, DDE, DDT (Total)           | 1.2                      | 2000                 | 2000               |      |
| 2,4 Dichlorophenoxy-acetic acid |                          | 7                    | 7                  |      |
| Fluoride                        | 730                      |                      |                    |      |
| Heptachlor                      | 7.4                      |                      |                    |      |
| Hexachlorobenzene               | 29                       |                      |                    |      |
| Hexachlorobutadiene             | 600                      |                      |                    |      |
| Iron                            | 378                      |                      |                    |      |
| Lead                            |                          | 3100                 | 3100               |      |
| Lindane                         | 84                       | 328                  | 328                |      |
| Malathion                       |                          | 0.63                 | 0.63               |      |
| Mercury                         |                          | 3100                 | 3100               |      |
| Molybdenum                      |                          | 40                   | 40                 |      |
| Nickel                          |                          |                      | 3100               |      |
| N-Nitrosodimethylamine          | 2.1                      | 0.088                | 0.088              |      |
| Pentachlorophenol               | 30                       |                      |                    |      |
| Phenol                          |                          | 82                   | 82                 |      |
| Polychlorinated biphenyls       | 4.6                      | <50                  | <50                |      |
| Selenium                        |                          | 4.8                  | 4.8                | 4.8  |
| Toxaphene                       | 10                       | 326                  | 326                |      |
| Trichloroethylene               | 310                      | 9500                 | 310                |      |
| Zinc                            |                          | 4500                 | 4500               | 4500 |

**Key: LA--land application, SD--surface disposal, I--incineration.**

**<sup>1</sup> Sewage sludge unit without a liner and leachate collection system.**

**<sup>2</sup> Sewage sludge unit with a liner and leachate collection system.**

**<sup>3</sup> Value expressed in grams per kilogram--dry weight basis.**

**[Appendix G added at 58 FR 9386, Feb. 19, 1993]**

Appendix 11-B. MODEL REMOVAL CREDIT SUMMARY FORM

POTW NAME =   
 NPDES/NONDISCHARGE PERMIT # =

Below Detection Limit Data (BDL) should be marked as "<" and the detection limit value", i.e. < 0.002.

|                        | POLLUTANT = |              |                           |              | POLLUTANT = |                           |            |              |
|------------------------|-------------|--------------|---------------------------|--------------|-------------|---------------------------|------------|--------------|
|                        | INFLUENT    | EFFLUENT     | PAIRED REMOVAL RATE (%)   | INFLUENT     | EFFLUENT    | PAIRED REMOVAL RATE (%)   | INFLUENT   | EFFLUENT     |
| (INFLUENT) SAMPLE DATE | FLOW (MGD)  | CONC. (mg/l) | FLOW (MGD)                | CONC. (mg/l) | FLOW (MGD)  | CONC. (mg/l)              | FLOW (MGD) | CONC. (mg/l) |
| 1                      |             |              |                           |              |             |                           |            |              |
| 2                      |             |              |                           |              |             |                           |            |              |
| 3                      |             |              |                           |              |             |                           |            |              |
| 4                      |             |              |                           |              |             |                           |            |              |
| 5                      |             |              |                           |              |             |                           |            |              |
| 6                      |             |              |                           |              |             |                           |            |              |
| 7                      |             |              |                           |              |             |                           |            |              |
| 8                      |             |              |                           |              |             |                           |            |              |
| 9                      |             |              |                           |              |             |                           |            |              |
| 10                     |             |              |                           |              |             |                           |            |              |
| 11                     |             |              |                           |              |             |                           |            |              |
| 12                     |             |              |                           |              |             |                           |            |              |
| 13                     |             |              |                           |              |             |                           |            |              |
| 14                     |             |              |                           |              |             |                           |            |              |
| 15                     |             |              |                           |              |             |                           |            |              |
| 16                     |             |              |                           |              |             |                           |            |              |
| 17                     |             |              |                           |              |             |                           |            |              |
| 18                     |             |              |                           |              |             |                           |            |              |
| 19                     |             |              |                           |              |             |                           |            |              |
| 20                     |             |              |                           |              |             |                           |            |              |
| 21                     |             |              |                           |              |             |                           |            |              |
|                        |             |              | # PAIRED REMOVAL RATES =  |              |             | # PAIRED REMOVAL RATES =  |            |              |
|                        |             |              | CONSISTENT REMOVAL RATE = |              |             | CONSISTENT REMOVAL RATE = |            |              |

- PAIRED REMOVAL RATE =  $100 * ((\text{INFLUENT CONC}) / (\text{EFFLUENT FLOW}) - (\text{EFFLUENT CONC}) / (\text{INFLUENT FLOW})) / ((\text{INFLUENT CONC}) / (\text{INFLUENT FLOW}) + (\text{EFFLUENT CONC}) / (\text{EFFLUENT FLOW}))$ ; PER THE FOLLOWING
- BDL EFFLUENT DATA ARE EQUAL TO THE DETECTION LIMIT.
- BDL INFLUENT DATA ARE NOT USED FOR REMOVAL RATE DETERMINATION.
- CONSISTENT REMOVAL RATE: IF # PAIRED REMOVAL RATES > 12, THEN LOWEST 50% OF PAIRED RR AVERAGE.
- IF # PAIRED REMOVAL RATES 8 - 12, THEN LOWEST 6 OF PAIRED RR AVERAGE.
- IF # PAIRED REMOVAL RATES < 6, THEN PAIRED RR AVERAGE.





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## Appendix 11-C. Typical NPDES Removal Credit Language

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The Permittee is hereby authorized to modify the national categorical pretreatment standard pursuant to Title 40 of the Code of Federal Regulations Section 403.7, (40 CFR 403.7) and 15A NCAC 2H .0921. This authority is granted contingent upon the Permittee's continued compliance with the demonstrated removal rates for the pollutants shown below and as documented in the Permittee's application dated January 1, 2001 and any data submitted in support thereof. This authority to modify only extends to those pollutants and industries. The Permittee, with prior approval by the Approval Authority, may extend the removal credit to other categorical industries provided that the extension will not cause the Permittee to violate its NPDES permit, a water quality standard, applicable sludge management requirements, or worker acute exposure limits.

### APPROVED REMOVAL RATE(S)

Pollutant Parameter

Removal Rate

The Permittee will comply with the following sampling and reporting requirements in order to demonstrate continued adherence to its stated consistent removal rate and compliance with:

- Influent and Effluent Pollutant Parameter Sampling, Monthly or 3 consecutive days per quarter according to Division guidance;
- Permittee will report the results of its influent and effluent sampling at least once per year in the Pretreatment Annual Report or more often as the Approval Authority requires. These results will be reported on a Removal Credit Summary Form approved by the Division.

Unless otherwise modified and withdrawn as provided in 40 CFR 403.7(f)(4), the authority granted herein shall remain effective until the expiration of this NC00##### NPDES permit.

