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## Title 40 –Protection of Environment

### Chapter I –Environmental Protection Agency

#### Subchapter D –Water Programs

#### Part 125 –Criteria and Standards for the National Pollutant Discharge Elimination System

#### Subpart G –Criteria for Modifying the Secondary Treatment Requirements Under Section 301(h) of the Clean Water Act

**Authority:** Clean Water Act, as amended by the Clean Water Act of 1977, 33 U.S.C. 1251 *et seq.*, unless otherwise noted.

**Source:** 59 FR 40658, Aug. 9, 1994, unless otherwise noted.

**Authority:** The Clean Water Act, 33 U.S.C. 1251 *et seq.*, unless otherwise noted.

**Source:** 44 FR 32948, June 7, 1979, unless otherwise noted.

### Appendix to Subpart G of Part 125—Applicant Questionnaire for Modification of Secondary Treatment Requirements

OMB Control Number 2040–0088 Expires on 2/28/96 Public reporting burden for this collection of information is estimated to average 1,295 - 19,552 hours per response, for small and large applicants, respectively. The reporting burden includes time for reviewing instructions, gathering data, including monitoring and toxics control activities, and completing and reviewing the questionnaire. Send comments regarding the burden estimate or any other aspect of this collection, including suggestions for reducing the burden, to Chief, Information Policy Branch, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW. (2136), Washington, DC 20460 and Office of Management and Budget, Office of Information and Regulatory Affairs, Attn: Desk Officer for EPA, Washington, DC 20503.

## I. Introduction

1. This questionnaire is to be submitted by both small and large applicants for modification of secondary treatment requirements under section 301(h) of the Clean Water Act (CWA). A small applicant is defined as a POTW that has a contributing population to its wastewater treatment facility of less than 50,000 and a projected average dry weather flow of less than 5.0 million gallons per day (mgd, 0.22 cubic meters/sec) [40 CFR 125.58(c)]. A large applicant is defined as a POTW that has a population contributing to its wastewater treatment facility of at least 50,000 or a projected average dry weather flow of its discharge of at least 5.0 million gallons per day (mgd, 0.22 cubic meters/sec) [40 CFR 125.58(c)]. The questionnaire is in two sections, a general information and basic requirements section (part II) and a technical evaluation section (part III). Satisfactory completion by small and large dischargers of the appropriate questions of this questionnaire is necessary to enable EPA to determine whether the applicant's modified discharge meets the criteria of section 301(h) and EPA regulations (40 CFR part 125, subpart G).
2. Most small applicants should be able to complete the questionnaire using available information. However, small POTWs with low initial dilution discharging into shallow waters or waters with poor dispersion and transport characteristics, discharging near distinctive and susceptible biological habitats, or discharging substantial quantities of toxics should anticipate the need to collect additional information and/or conduct additional analyses to demonstrate compliance with section 301(h) criteria. If there are questions in this regard, applicants should contact the appropriate EPA Regional Office for guidance.

3. Guidance for responding to this questionnaire is provided by the newly amended section 301(h) technical support document. Where available information is incomplete and the applicant needs to collect additional data during the period it is preparing the application or a letter of intent, EPA encourages the applicant to consult with EPA prior to data collection and submission. Such consultation, particularly if the applicant provides a project plan, will help ensure that the proper data are gathered in the most efficient matter.
4. The notation (L) means large applicants must respond to the question, and (S) means small applicants must respond.

## II. General Information and Basic Data Requirements

### A. Treatment System Description

1. (L,S) On which of the following are you basing your application: a current discharge, improved discharge, or altered discharge, as defined in 40 CFR 125.58? [40 CFR 125.59(a)]
2. (L,S) Description of the Treatment/Outfall System [40 CFR 125.62(a) and 125.62(e)]
  - a. Provide detailed descriptions and diagrams of the treatment system and outfall configuration which you propose to satisfy the requirements of section 301(h) and 40 CFR part 125, subpart G. What is the total discharge design flow upon which this application is based?
  - b. Provide a map showing the geographic location of proposed outfall(s) (i.e., discharge). What is the latitude and longitude of the proposed outfall(s)?
  - c. For a modification based on an improved or altered discharge, provide a description and diagram of your current treatment system and outfall configuration. Include the current outfall's latitude and longitude, if different from the proposed outfall.
3. (L,S) Primary or equivalent treatment requirements [40 CFR 125.60]
  - a. Provide data to demonstrate that your effluent meets at least primary or equivalent treatment requirements as defined in 40 CFR 125.58(r) [40 CFR 125.60]
  - b. If your effluent does not meet the primary or equivalent treatment requirements, when do you plan to meet them? Provide a detailed schedule, including design, construction, start-up and full operation, with your application. This requirement must be met by the effective date of the new section 301(h) modified permit.
4. (L,S) Effluent Limitations and Characteristics [40 CFR 125.61(b) and 125.62(e)(2)]
  - a. Identify the final effluent limitations for five-day biochemical oxygen demand (BOD<sub>5</sub>), suspended solids, and pH upon which your application for a modification is based:
    - BOD<sub>5</sub> \_\_\_ mg/L
    - Suspended solids \_\_\_ mg/L
    - pH \_\_\_ (range)

- b. Provide data on the following effluent characteristics for your current discharge as well as for the modified discharge if different from the current discharge:

Flow (m<sup>3</sup>/sec):

- minimum
- average dry weather
- average wet weather
- maximum
- annual average

BOD<sub>5</sub> (mg/L) for the following plant flows:

- minimum
- average dry weather
- average wet weather
- maximum
- annual average

Suspended solids (mg/L) for the following plant flows:

- minimum
- average dry weather
- average wet weather
- maximum
- annual average

Toxic pollutants and pesticides (ug/L):

- list each toxic pollutant and pesticide
- list each 304(a)(1) criteria and toxic pollutant and pesticide

pH:

- minimum

–maximum

Dissolved oxygen (mg/L, prior to chlorination) for the following plant flows:

–minimum

–average dry weather

–average wet weather

–maximum

–annual average

Immediate dissolved oxygen demand (mg/L).

5. (L,S) Effluent Volume and Mass Emissions [40 CFR 125.62(e)(2) and 125.67]
  - a. Provide detailed analyses showing projections of effluent volume (annual average, m<sup>3</sup>/sec) and mass loadings (mt/yr) of BOD<sub>5</sub> and suspended solids for the design life of your treatment facility in five-year increments. If the application is based upon an improved or altered discharge, the projections must be provided with and without the proposed improvements or alterations.
  - b. Provide projections for the end of your five-year permit term for 1) the treatment facility contributing population and 2) the average daily total discharge flow for the maximum month of the dry weather season.
6. (L,S) Average Daily Industrial Flow (m<sup>3</sup>/sec). Provide or estimate the average daily industrial inflow to your treatment facility for the same time increments as in question II.A.5 above. [40 CFR 125.66]
7. (L,S) Combined Sewer Overflows [40 CFR 125.67(b)]
  - a. Does (will) your treatment and collection system include combined sewer overflows?
  - b. If yes, provide a description of your plan for minimizing combined sewer overflows to the receiving water.
8. (L,S) Outfall/Diffuser Design. Provide the following data for your current discharge as well as for the modified discharge, if different from the current discharge: [40 CFR 125.62(a)(1)]
  - Diameter and length of the outfall(s) (meters)
  - Diameter and length of the diffuser(s) (meters)
  - Angle(s) of port orientation(s) from horizontal (degrees)
  - Port diameter(s) (meters)
  - Orifice contraction coefficient(s), if known

- Vertical distance from mean lower low water (or mean low water) surface and outfall port(s) centerline (meters)
- Number of ports
- Port spacing (meters)
- Design flow rate for each port, if multiple ports are used (m<sup>3</sup>/sec)

## B. Receiving Water Description

1. (L,S) Are you applying for a modification based on a discharge to the ocean [40 CFR 125.58(n)] or to a saline estuary [40 CFR 125.58(v)]? [40 CFR 125.59(a)].
2. (L,S) Is your current discharge or modified discharge to stressed waters as defined in 40 CFR 125.58(z)? If yes, what are the pollution sources contributing to the stress? [40 CFR 125.59(b)(4) and 125.62(f)].
3. (L,S) Provide a description and data on the seasonal circulation patterns in the vicinity of your current and modified discharge(s). [40 CFR 125.62(a)].
4. (L) Oceanographic conditions in the vicinity of the current and proposed modified discharge(s). Provide data on the following: [40 CFR 125.62(a)].
  - Lowest ten percentile current speed (m/sec)
  - Predominant current speed (m/sec) and direction (true) during the four seasons
  - Period(s) of maximum stratification (months)
  - Period(s) of natural upwelling events (duration and frequency, months)
  - Density profiles during period(s) of maximum stratification
5. (L,S) Do the receiving waters for your discharge contain significant amounts of effluent previously discharged from the treatment works for which you are applying for a section 301(h) modified permit? [40 CFR 125.57(a)(9)]
6. Ambient water quality conditions during the period(s) of maximum stratification: at the zone of initial dilution (ZID) boundary, at other areas of potential impact, and at control stations. [40 CFR 125.62(a)]
  - a. (L) Provide profiles (with depth) on the following for the current discharge location and for the modified discharge location, if different from the current discharge:
    - BOD<sub>5</sub> (mg/L)
    - Dissolved oxygen (mg/L)
    - Suspended solids (mg/L)

–pH

–Temperature (°C)

–Salinity (ppt)

–Transparency (turbidity, percent light transmittance)

–Other significant variables (e.g., nutrients, 304(a)(1) criteria and toxic pollutants and pesticides, fecal coliform bacteria)

- b. (S) Provide available data on the following in the vicinity of the current discharge location and for the modified discharge location, if different from the current discharge: [40 CFR 125.61(b)(1)]

–Dissolved oxygen (mg/L)

–Suspended solids (mg/L)

–pH

–Temperature (°C)

–Salinity (ppt)

–Transparency (turbidity, percent light transmittance)

–Other significant variables (e.g., nutrients, 304(a)(1) criteria and toxic pollutants and pesticides, fecal coliform bacteria)

- c. (L,S) Are there other periods when receiving water quality conditions may be more critical than the period(s) of maximum stratification? If so, describe these and other critical periods and data requested in 6.a. for the other critical period(s). [40 CFR 125.62(a)(1)].

7. (L) Provide data on steady state sediment dissolved oxygen demand and dissolved oxygen demand due to resuspension of sediments in the vicinity of your current and modified discharge(s) (mg/L/day).

## C. Biological Conditions

1. (L) Provide a detailed description of representative biological communities (e.g., plankton, macrobenthos, demersal fish, etc.) in the vicinity of your current and modified discharge(s): within the ZID, at the ZID boundary, at other areas of potential discharge-related impact, and at reference (control) sites. Community characteristics to be described shall include (but not be limited to) species composition; abundance; dominance and diversity; spatial/temporal distribution; growth and reproduction; disease frequency; trophic structure and productivity patterns; presence of opportunistic species; bioaccumulation of toxic materials; and the occurrence of mass mortalities.

2. (L,S)

- a. Are distinctive habitats of limited distribution (such as kelp beds or coral reefs) located in areas potentially affected by the modified discharge? [40 CFR 125.62(c)]
  - b. If yes, provide information on type, extent, and location of habitats.
3. (L,S)
- a. Are commercial or recreational fisheries located in areas potentially affected by the discharge? [40 CFR 125.62 (c) and (d)]
  - b. If yes, provide information on types, location, and value of fisheries.

## D. State and Federal Laws [40 CFR 125.61 and 125.62(a)(1)]

1. (L,S) Are there water quality standards applicable to the following pollutants for which a modification is requested:
  - Biochemical oxygen demand or dissolved oxygen?
  - Suspended solids, turbidity, light transmission, light scattering, or maintenance of the euphotic zone?
  - pH of the receiving water?
2. (L,S) If yes, what is the water use classification for your discharge area? What are the applicable standards for your discharge area for each of the parameters for which a modification is requested? Provide a copy of all applicable water quality standards or a citation to where they can be found.
3. (L,S) Will the modified discharge: [40 CFR 125.59(b)(3)].
  - Be consistent with applicable State coastal zone management program(s) approved under the Coastal Zone Management Act as amended, 16 U.S.C. 1451 *et seq.*? [See 16 U.S.C. 1456(c)(3)(A)]
  - Be located in a marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act (MPRSA) as amended, 16 U.S.C. 1431 *et seq.*, or in an estuarine sanctuary designated under the Coastal Zone Management Act as amended, 16 U.S.C. 1461? If located in a marine sanctuary designated under Title III of the MPRSA, attach a copy of any certification or permit required under regulations governing such marine sanctuary. [See 16 U.S.C. 1432(f)(2)]
  - Be consistent with the Endangered Species Act as amended, 16 U.S.C. 1531 *et seq.*? Provide the names of any threatened or endangered species that inhabit or obtain nutrients from waters that may be affected by the modified discharge. Identify any critical habitat that may be affected by the modified discharge and evaluate whether the modified discharge will affect threatened or endangered species or modify a critical habitat. [See 16 U.S.C. 1536(a)(2)].
4. (L,S) Are you aware of any State or Federal laws or regulations (other than the Clean Water Act or the three statutes identified in item 3 above) or an Executive Order which is applicable to your discharge? If yes, provide sufficient information to demonstrate that your modified discharge will comply with such law(s), regulation(s), or order(s). [40 CFR 125.59 (b)(3)].

### III. Technical Evaluation

#### A. Physical Characteristics of Discharge [40 CFR 125.62(a)]

1. (L,S) What is the critical initial dilution for your current and modified discharge(s) during
  - (1) the period(s) of maximum stratification? and
  - (2) any other critical period(s) of discharge volume/composition, water quality, biological seasons, or oceanographic conditions?
2. (L,S) What are the dimensions of the zone of initial dilution for your modified discharge(s)?
3. (L) What are the effects of ambient currents and stratification on dispersion and transport of the discharge plume/wastefield?
4. (S) Will there be significant sedimentation of suspended solids in the vicinity of the modified discharge?
5. (L) Sedimentation of suspended solids
  - a. What fraction of the modified discharge's suspended solids will accumulate within the vicinity of the modified discharge?
  - b. What are the calculated area(s) and rate(s) of sediment accumulation within the vicinity of the modified discharge(s) (g/m<sup>2</sup>/yr)?
  - c. What is the fate of settleable solids transported beyond the calculated sediment accumulation area?

#### B. Compliance with Applicable Water Quality Standards and CWA § 304(a)(1) water quality criteria [40 CFR 125.61(b) and 125.62(a)]

1. (L,S) What is the concentration of dissolved oxygen immediately following initial dilution for the period(s) of maximum stratification and any other critical period(s) of discharge volume/composition, water quality, biological seasons, or oceanographic conditions?
2. (L,S) What is the farfield dissolved oxygen depression and resulting concentration due to BOD exertion of the wastefield during the period(s) of maximum stratification and any other critical period(s)?
3. (L) What are the dissolved oxygen depressions and resulting concentrations near the bottom due to steady sediment demand and resuspension of sediments?
4. (L,S) What is the increase in receiving water suspended solids concentration immediately following initial dilution of the modified discharge(s)?
5. (L) What is the change in receiving water pH immediately following initial dilution of the modified discharge(s)?
6. (L,S) Does (will) the modified discharge comply with applicable water quality standards for:
  - Dissolved oxygen?



–Suspended solids or surrogate standards?

–pH?

7. (L,S) Provide data to demonstrate that all applicable State water quality standards, and all applicable water quality criteria established under Section 304(a)(1) of the Clean Water Act for which there are no directly corresponding numerical applicable water quality standards approved by EPA, are met at and beyond the boundary of the ZID under critical environmental and treatment plant conditions in the waters surrounding or adjacent to the point at which your effluent is discharged. [40 CFR 125.62(a)(1)]
8. (L,S) Provide the determination required by 40 CFR 125.61(b)(2) for compliance with all applicable provisions of State law, including water quality standards or, if the determination has not yet been received, a copy of a letter to the appropriate agency(s) requesting the required determination.

### C. Impact on Public Water Supplies [40 CFR 125.62(b)]

1. (L,S) Is there a planned or existing public water supply (desalinization facility) intake in the vicinity of the current or modified discharge?
2. (L,S) If yes:
  - a. What is the location of the intake(s) (latitude and longitude)?
  - b. Will the modified discharge(s) prevent the use of intake(s) for public water supply?
  - c. Will the modified discharge(s) cause increased treatment requirements for public water supply(s) to meet local, State, and EPA drinking water standards?

### D. Biological Impact of Discharge [40 CFR 125.62(c)]

1. (L,S) Does (will) a balanced indigenous population of shellfish, fish, and wildlife exist:
  - Immediately beyond the ZID of the current and modified discharge(s)?
  - In all other areas beyond the ZID where marine life is actually or potentially affected by the current and modified discharge(s)?
2. (L,S) Have distinctive habitats of limited distribution been impacted adversely by the current discharge and will such habitats be impacted adversely by the modified discharge?
3. (L,S) Have commercial or recreational fisheries been impacted adversely by the current discharge (e.g., warnings, restrictions, closures, or mass mortalities) or will they be impacted adversely by the modified discharge?
4. (L,S\*) Does the current or modified discharge cause the following within or beyond the ZID: [40 CFR 125.62(c)(3)]
  - Mass mortality of fishes or invertebrates due to oxygen depletion, high concentrations of toxics, or other conditions?
  - An increased incidence of disease in marine organisms?

–An abnormal body burden of any toxic material in marine organisms?

–Any other extreme, adverse biological impacts?

5. (L,S) For discharges into saline estuarine waters: [40 CFR 125.62 (c)(4)]

–Does or will the current or modified discharge cause substantial differences in the benthic population within the ZID and beyond the ZID?

–Does or will the current or modified discharge interfere with migratory pathways within the ZID?

–Does or will the current or modified discharge result in bioaccumulation of toxic pollutants or pesticides at levels which exert adverse effects on the biota within the ZID?

No section (h) modified permit shall be issued where the discharge enters into stressed saline estuarine waters as stated in 40 CFR 125.59(b)(4).

6. (L,S) For improved discharges, will the proposed improved discharge(s) comply with the requirements of 40 CFR 125.62(a) through 125.62(d)? [40 CFR 125.62(e)]

7. (L,S) For altered discharge(s), will the altered discharge(s) comply with the requirements of 40 CFR 125.62(a) through 125.62(d)? [40 CFR 125.62(e)]

8. (L,S) If your current discharge is to stressed ocean waters, does or will your current or modified discharge: [40 CFR 125.62(f)]

–Contribute to, increase, or perpetuate such stressed condition?

–Contribute to further degradation of the biota or water quality if the level of human perturbation from other sources increases?

–Retard the recovery of the biota or water quality if human perturbation from other sources decreases?

## E. Impacts of Discharge on Recreational Activities [40 CFR 125.62(d)]

1. (L,S) Describe the existing or potential recreational activities likely to be affected by the modified discharge(s) beyond the zone of initial dilution.

2. (L,S) What are the existing and potential impacts of the modified discharge(s) on recreational activities? Your answer should include, but not be limited to, a discussion of fecal coliform bacteria.

3. (L,S) Are there any Federal, State, or local restrictions on recreational activities in the vicinity of the modified discharge(s)? If yes, describe the restrictions and provide citations to available references.

4. (L,S) If recreational restrictions exist, would such restrictions be lifted or modified if you were discharging a secondary treatment effluent?

## F. Establishment of a Monitoring Program [40 CFR 125.63]

1. (L,S) Describe the biological, water quality, and effluent monitoring programs which you propose to meet the criteria of 40 CFR 125.63. Only those scientific investigations that are necessary to study the effects of the proposed discharge should be included in the scope of the 301(h) monitoring program [40 CFR 125.63(a)(1)(i)(B)].
2. (L,S) Describe the sampling techniques, schedules, and locations, analytical techniques, quality control and verification procedures to be used.
3. (L,S) Describe the personnel and financial resources available to implement the monitoring programs upon issuance of a modified permit and to carry it out for the life of the modified permit.

## G. Effect of Discharge on Other Point and Nonpoint Sources [40 CFR 125.64]

1. (L,S) Does (will) your modified discharge(s) cause additional treatment or control requirements for any other point or nonpoint pollution source(s)?
2. (L,S) Provide the determination required by 40 CFR 125.64(b) or, if the determination has not yet been received, a copy of a letter to the appropriate agency(s) requesting the required determination.

## H. Toxics Control Program and Urban Area Pretreatment Program [40 CFR 125.65 and 125.66]

1.
  - a. (L,S) Do you have any known or suspected industrial sources of toxic pollutants or pesticides?
  - b. (L,S) If no, provide the certification required by 40 CFR 125.66(a)(2) for small dischargers, and required by 40 CFR 125.66(c)(2) for large dischargers.
  - c. (L,S\*) Provide the results of wet and dry weather effluent analyses for toxic pollutants and pesticides as required by 40 CFR 125.66(a)(1). (\* to the extent practicable)
  - d. (L,S\*) Provide an analysis of known or suspected industrial sources of toxic pollutants and pesticides identified in (1)(c) above as required by 40 CFR 125.66(b). (\* to the extent practicable)
2. (S)a. Are there any known or suspected water quality, sediment accumulation, or biological problems related to toxic pollutants or pesticides from your modified discharge(s)?  
  
(S) b. If no, provide the certification required by 40 CFR 125.66(d)(2) together with available supporting data.  
  
(S) c. If yes, provide a schedule for development and implementation of nonindustrial toxics control programs to meet the requirements of 40 CFR 126.66(d)(3).  
  
(L) d. Provide a schedule for development and implementation of a nonindustrial toxics control program to meet the requirements of 40 CFR 125.66(d)(3).

3. (L,S) Describe the public education program you propose to minimize the entrance of nonindustrial toxic pollutants and pesticides into your treatment system. [40 CFR 125.66(d)(1)]
4. (L,S) Do you have an approved industrial pretreatment program?
  - a. If yes, provide the date of EPA approval.
  - b. If no, and if required by 40 CFR part 403 to have an industrial pretreatment program, provide a proposed schedule for development and implementation of your industrial pretreatment program to meet the requirements of 40 CFR part 403.
5. Urban area pretreatment requirement [40 CFR 125.65] Dischargers serving a population of 50,000 or more must respond.
  - a. Provide data on all toxic pollutants introduced into the treatment works from industrial sources (categorical and noncategorical).
  - b. Note whether applicable pretreatment requirements are in effect for each toxic pollutant. Are the industrial sources introducing such toxic pollutants in compliance with all of their pretreatment requirements? Are these pretreatment requirements being enforced? [40 CFR 125.65(b)(2)]
  - c. If applicable pretreatment requirements do not exist for each toxic pollutant in the POTW effluent introduced by industrial sources,

—provide a description and a schedule for your development and implementation of applicable pretreatment requirements [40 CFR 125.65(c)], or

—describe how you propose to demonstrate secondary removal equivalency for each of those toxic pollutants, including a schedule for compliance, by using a secondary treatment pilot plant. [40 CFR 125.65(d)]