

FACT SHEET

The United States Environmental Protection Agency (EPA)
Plans To Reissue A
National Pollutant Discharge Elimination System (NPDES) Permit To:

The City of Idaho Falls
P.O. Box 50220
Idaho Falls, Idaho 83405

Permit Number: ID-002126-1
Public Notice start date:
Public Notice expiration date:

EPA Proposes NPDES Permit Reissuance.

EPA proposes to reissue an NPDES permit to the City of Idaho Falls. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to the Snake River. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge and current sewage sludge (biosolids) practices
- a listing of proposed effluent limitations, schedules of compliance, and other conditions
- a map and description of the discharge location
- detailed technical material supporting the conditions in the permit

The State of Idaho Proposes Certification.

EPA is requesting that the Idaho Division of Environmental Quality certify the NPDES permit for the City of Idaho Falls, under section 401 of the Clean Water Act. The state reviewed and provided comments on the preliminary draft permit. Those comments have been incorporated into the draft permit.

Public Comment.

Persons wishing to comment on or request a Public Hearing for the draft permit may do so in writing by the expiration date of the Public Notice. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Office of Water will make a final decision regarding permit reissuance.

Persons wishing to comment on State Certification should submit written comments by the Public

Notice expiration date to the Idaho Division of Environmental Quality (IDEQ) at 900 N. Skyline, Suite B, Idaho Falls, Idaho 83402. A copy of the comments should also be submitted to EPA.

If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the comments and issue the permit. The permit will become effective 30 days after the issuance date, unless a request for an evidentiary hearing is submitted within 30 days.

Documents are Available for Review.

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (See address below). Draft permits, Fact Sheets, and other information can also be found by visiting the Region 10 website at www.epa.gov/r10earth/water.htm.

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-2108 or
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The Fact Sheet and draft permit are also available at:

EPA Idaho Operations Office
1435 North Orchard Street
Boise, Idaho 83706
(208) 378-5746

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I. APPLICANT

City of Idaho Falls
NPDES Permit No.: ID-002126-1

Facility Mailing Address:
P.O. Box 50220
Idaho Falls, Idaho 83405

Facility Location:
4055 Glen Koester Lane
Idaho Falls, Idaho 83402

II. FACILITY INFORMATION

A. Treatment Plant Description

The City of Idaho Falls owns, operates, and has maintenance responsibility for a facility which treats domestic sewage from local residents and commercial establishments. The Idaho Falls wastewater treatment plant is designed to provide secondary treatment to 17 mgd of wastewater, however, actual flows have been much less than the design value. From 1995 through 1999, the facility's average monthly discharge has been between 8.9 mgd to 11.5 mgd, with an average value of 10.3 mgd. The facility consists of the following unit operations: sewage shredder, grit chamber, primary clarifier, activated biofilter tower, aeration basins, secondary clarifiers, chlorine contact chambers and dechlorination. In addition, sludge generated at this facility is treated in anaerobic sludge digesters and ultimately disposed through land application.

B. Background Information

The most recent NPDES permit for the wastewater treatment plant was issued on September 30, 1993 and expired on November 2, 1998. The permit was modified on February 6, 1996. The modification did not change the expiration date of the permit. An NPDES application for permit reissuance was submitted by the city on May 4, 1998, and resubmitted with minor updates on July 12, 2000.

EPA conducted a review of the facility's Discharge Monitoring Reports¹ for the past five years and found that the facility has been in compliance with its permit effluent limits. Past Idaho DEQ inspection reports were also reviewed. Inspectors generally found the plant well maintained, records in good order, and the facility to

¹Discharge monitoring reports are forms that the facility uses to report the results of monitoring the facility has done in compliance with their NPDES permit.

be in compliance with permit limits.

A map has been included in Appendix A which shows the location of the treatment plant and the discharge location.

III. RECEIVING WATER

A. Outfall location/ Receiving Water

The treated effluent from the City of Idaho Falls wastewater treatment facility is discharged from outfall 001 to the Snake River at approximately river mile 796 (located at latitude 43° 27' 45" and longitude 112° 04' 15").

To determine flow in the Snake River at the outfall location, EPA evaluated data gathered by the USGS at site number 13057155, "Snake River above Eagle Rock near Idaho Falls." This is the nearest USGS site above the outfall location. Daily flow values were available from January 1988 through December 1999. The statistical 1Q10² and 7Q10³ flows were calculated from the data set. The 7Q10 flow is 1357 cfs and the 1Q10 flow is 1110 cfs. The City of Idaho Falls has been monitoring Snake River flow above the outfall on a monthly basis for the last 6 years. During that time the average flow has been 8,463 cfs. The lowest recorded flow was 2,400 cfs. During development of the 1993 NPDES permit, a low flow value of 1200cfs was used in developing effluent limitations. The flow values from the USGS data site (Snake River above Eagle Rock) will be used to determine water quality based effluent limits since it is the most complete data base (daily values) and covers the longer time period (1988-1999). The low flow values of this data set compare well with the low flow values used in the previous permit issuance.

B. Water Quality Standards

A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as cold water biota, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body. The anti-degradation policy represents a three tiered approach to maintain and protect various levels of water quality and uses.

² The 1Q10 represents the lowest daily flow that is expected to occur once in ten years.

³ The 7Q10 represents the lowest 7 day average flow that is expected to occur once in ten years.

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 16.01.02.150.03.) protect the Snake River for the following beneficial use classifications: cold water communities, salmonid spawning, primary contact recreation, and domestic water supply.

The criteria that the State of Idaho has deemed necessary to protect the beneficial uses for the Snake River, and the State's anti-degradation policy are summarized in Appendix B to this fact sheet.

C. Water Quality Limited Segment

A water quality limited segment is any waterbody, or definable portion of water body, where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards. This section of the Snake River has not been listed as water quality limited for any parameters.

Section 303(d) of the Clean Water Act (CWA) requires States to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standards and allocates that load to known point sources and nonpoint sources. Since this section of the Snake River has not been listed as water quality limited, there are no TMDL management plans under development for this receiving water.

IV. EFFLUENT LIMITATIONS

In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. A technology based effluent limit requires a minimum level of treatment for municipal point sources based on currently available treatment technologies. A water quality based effluent limit is designed to ensure that the water quality standards of a waterbody are being met. For more information on deriving technology-based effluent limits and water quality-based effluent limits see Appendix C. The following summarizes the proposed effluent limitations that are in the draft permit.

1. The pH range shall be between 6.5 - 9.0 standard units.
2. Removal Requirements for BOD₅ and TSS: For any month, the monthly average effluent concentration shall not exceed 15 percent of the monthly average influent concentration.
3. There shall be no discharge of floating solids or visible foam other than trace amounts.

4. Table 1, below, presents the proposed effluent limits for BOD₅, TSS, fecal coliform bacteria, E. coli bacteria, total residual chlorine, copper, lead, and ammonia.

TABLE 1: Monthly, Weekly and Daily Effluent Limitations

Parameters	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
BOD ₅	30 mg/L (4250 lbs/day)	45 mg/L (6380 lbs/day)	---
TSS	30 mg/L (4250 lbs/day)	45 mg/L (6380 lbs/day)	---
Fecal Coliform Bacteria	---	200 colonies/100 ml	---
E. coli Bacteria	126 colonies/100 ml	---	406 colonies/100 ml
Total Residual Chlorine	0.09 mg/L	---	0.20 mg/L
Copper	56 µg/L (7.9 lbs/day)	---	160 µg/L (23 lbs/day)
Lead	21 µg/L (3.0 lbs/day)	---	49 µg/L (7.0 lbs/day)
Ammonia October 1 - May 31	1.3 mg/L (180 lbs/day)	---	2.8 mg/L (400 lbs/day)
Ammonia June 1 - September 30	0.28 mg/L (40 lbs/day)	---	0.61 mg/L (87 lbs/day)

V. PRETREATMENT PROGRAM REQUIREMENTS

The city developed a pretreatment program in accordance with 40 CFR Part 403 and was approved by EPA. The city's NPDES permit was modified on August 30, 1984 to include pretreatment implementation conditions.

The pretreatment conditions of the proposed permit (sampling, reporting, and program management requirements) remain largely unchanged from the previous permit. The city of Idaho Falls is generally in compliance with its pretreatment program requirements.

Semi-annual sampling (three samples in a week) of the influent, effluent, and final sludge is required as part of the pretreatment program. The monitoring results are submitted as part of the annual pretreatment report. The draft permit does require the permittee to conduct a one-time toxic organic pollutant scan during the first year of the permit. The draft permit also requires the permittee to complete a local limits evaluation during the fourth year of the permit.

During the term of the existing permit, the city has made the following changes to its program: 1) modification to the sewer use ordinance, 2) development of agreements with outlying jurisdictions, 3) updated its industrial user survey, 4) development of pretreatment implementation procedures, and 5) drafting of revised local limits. The City Council amended the Sewer Use Ordinance on April 24, 1998. The revision to the ordinance included the local limits necessary to meet the requirements of the EPA Pretreatment Regulations. EPA approved the Sewer Use Ordinance on August 25, 1998.

VI. SLUDGE REQUIREMENTS

Idaho Falls wastewater treatment facility produces and distributes biosolids for land application. Biosolids are applied as a soil amendment product to agricultural land. The permittee has submitted a biosolids application to EPA on May 4, 1998, and resubmitted the application on July 12, 2000 as part of the NPDES permit reissuance effort. The 1993 NPDES permit had biosolids requirements which have been eliminated from this proposed draft permit. The basis for this change is EPA Region 10's recent decision to separate wastewater and sludge permitting. Under the Clean Water Act (CWA), EPA has the authority to issue separate sludge-only permits for the purposes of regulating biosolids. EPA will issue a sludge-only permit to this facility at a later date.

Until the issuance of a sludge-only permit, the facility's sludge activities will continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, meaning that permittees must comply with them whether or not a permit has been issued. Therefore, the CWA does not require the facility to have a permit prior to use or disposal of biosolids.

The Part 503 regulations require that permittees have a current sludge application on file with the permitting authority.

VII. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports to EPA.

The existing permit required effluent monitoring for parameters with effluent limitations as well as for nutrients (ammonia, nitrite, nitrate, TKN, and total phosphorus). The existing permit also required biomonitoring twice per year and monthly upstream and downstream monitoring for flow, temperature, pH, DO, and nutrients. EPA proposes that the effluent monitoring for parameters with limitations continue to be monitored at the same frequency as the existing permit in order to determine compliance with the limitations. New

limitations are established in the draft permit for E. coli, ammonia, lead, and copper. Ammonia and E. coli shall be monitored daily and copper and lead shall be monitored once per week. As discussed in Appendix C, the effluent does not demonstrate a reasonable potential to exceed nutrient criteria, however, nutrients remain a concern in the Snake River, particularly in downstream reaches. Due to this concern, the proposed permit retains effluent and ambient nutrient monitoring but reduces the frequency from once per month to once per calendar quarter. Also, metals and hardness have been added to the ambient monitoring program to characterize metals concentrations in this portion of the Snake River. The draft permit requires whole effluent toxicity (WET) testing to be conducted quarterly in the fourth year of the permit, in order to gather information prior to the next permit reissuance. See appendix C, Toxic Substances, for further discussion of WET testing requirements.

Table 2 presents the proposed effluent monitoring requirements.

TABLE 2: City of Idaho Falls Waste Water Treatment Plant Monitoring Requirements

Parameter	Sample Location	Sample Frequency	Sample Type
Flow, mgd	Influent or effluent	Continuous	Recording
BOD ₅ , mg/L	Influent and effluent	1/day	24-hour composite
TSS, mg/L	Influent and effluent	1/day	24-hour composite
pH, standard units	Effluent	1/day	grab
Fecal Coliform Bacteria, colonies/100 ml	Effluent	1/day	grab
E. coli Bacteria, colonies/100 ml	Effluent	1/day	grab
Total Residual Chlorine	Effluent	4/day	grab
Total Ammonia as N, mg/L	Effluent	1/day	24-hour composite
Copper	Effluent	1/week	24-hour composite
Lead	Effluent	1/week	24-hour composite
Nitrate as N, mg/L	Effluent and ambient	4/year	24-hour composite
Nitrite as N, mg/L	Effluent and ambient	4/year	24-hour composite
Total Kjeldahl Nitrogen, mg/L	Effluent and ambient	4/year	24-hour composite
Total Phosphorus	Effluent and ambient	4/year	24-hour composite
Dissolved Oxygen, mg/L	Effluent and ambient	4/year	grab

Parameter	Sample Location	Sample Frequency	Sample Type
Hardness as CaCO ₃ , mg/L	Ambient	4/year	24-hour composite
Metals	Ambient	4/year	24-hour composite
Metals	Influent, effluent, sludge (pretreatment)	2/year	24-hour composite (sludge-grab)
Whole Effluent Toxicity	Effluent	4/year, fourth year of the permit only	24-hour composite

VIII. OTHER PERMIT CONDITIONS

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the permittee to develop and submit a Quality Assurance Plan to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The permittee is required to complete a Quality Assurance Plan within 60 days of the effective date of the final permit. The Quality Assurance Plan shall consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

B. Operations and Maintenance Plan

Section 402 of the Clean Water Act and federal regulations 40 CFR 122.44(k)(2) and (3) authorize EPA to require best management practices, or BMPs, in NPDES permits. BMPs are measures for controlling the generation of pollutants and their release to waterways. For municipal facilities, these measures are typically included in the facility's Operation & Maintenance (O&M) plan. These measures are important tools for waste minimization and pollution prevention.

The draft permit requires the City of Idaho Falls to incorporate appropriate BMPs into its O&M plan within 180 days of permit issuance. Specifically, the permittees must consider spill prevention and control, optimization of chemical use, public education aimed at controlling the introduction of household hazardous materials to the sewer system, and water conservation. To the extent that any of these issues have already been addressed, the permittees need only reference the appropriate document in its O&M plan. The O&M plan must be revised as new practices are developed.

As part of proper operation and maintenance, the draft permit requires the City to develop a facility plan when the annual average flow exceeds 85 percent of the design flow of the plant (design flow 17 mgd x 85% = 14.5 mgd). This plan requires the City to develop a strategy for remaining in compliance with effluent limits in the

permit.

C. Additional Permit Provisions

Sections II, III, and IV of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

IX. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service if their actions could adversely affect any threatened or endangered species. EPA has determined that issuance of this permit will not affect any of the endangered species in the vicinity of the discharge. See Appendix D for further details.

B. State Certification

Section 401 of the Clean Water Act requires EPA to seek state certification before issuing a final permit. As a result of the certification, the state may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

C. Permit Expiration

This permit will expire five years from the effective date of the permit.

APPENDIX A
WASTEWATER TREATMENT PLANT LOCATION

APPENDIX B
WATER QUALITY STANDARDS

(A) Water Quality Criteria

For the City of Idaho Falls discharge, the following water quality criteria are necessary for the protection of the beneficial uses of the Snake River (Only portions of each section are reprinted here.):

1. IDAPA 16.01.02.200.02 - Surface waters of the State shall be free from toxic substances in concentrations that impair designated beneficial uses.
2. IDAPA 16.01.02.200.05 - Surface waters of the State shall be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
3. IDAPA 16.01.02.200.06 - Excess Nutrient. Surface waters of the State shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.
4. IDAPA 16.01.02.200.08 - Sediment. Sediment shall not exceed quantities specified in section 250 and 252, or , in the absence of specific sediment criteria, quantities which impair designated beneficial uses. Determinations of impairment shall be based on water quality monitoring and surveillance and the information utilized as described in Section 350.
5. IDAPA 16.01.02.210.01 - Incorporation of National Toxic Rule. Toxic substance criteria set forth in 40 CFR 131.36(b)(1) (National Toxics Rule), as of July 1, 1993, is hereby incorporated by reference in the manner provided in subsection 210.02, however, the standard for arsenic shall be fifty (50) µg/l.
6. IDAPA 16.01.02.250.01.a. - Hydrogen ion concentration (pH) values within the range of 6.5 to 9.5 standard units.
7. IDAPA 16.01.02.250.01.c. - The one (1) hour average concentration of total residual chlorine shall not exceed nineteen (19) : g/L. The four (4) day average concentration shall not exceed eleven (11) : g/L.
8. IDAPA 16.01.02.250.02.a. - Dissolved oxygen concentrations shall exceed 6 mg/L at all times.
9. IDAPA 16.01.02.250.02.b. - Water temperatures of 22 degrees C or less with a maximum daily average of no greater than 19 degrees C.
10. IDAPA 16.01.02.250.02.c.i. - The one hour average concentration of un-ionized ammonia

(as N) is not to exceed $(0.43/A/B/2)$ mg/L, where:

A = 1 if the water temperature (T) is $\geq 20^{\circ}\text{C}$, or

A = $10^{(0.03(20-T))}$ if T < 20°C , and

B = 1 if the pH is ≥ 8.0 , or

B = $(1 + 10^{(7.4-\text{pH})}) \div 1.25$ if pH is < 8.0

11. IDAPA 16.01.02.250.02.c.ii - The four day average concentration of un-ionized ammonia (as N) is not to exceed $(0.66A/B/C)$ mg/L, where:

A = 1.4 if T is $\geq 15^{\circ}\text{C}$, or

A = $10^{(0.03(20-T))}$ if T < 15°C , and

B = 1 if the pH is ≥ 8.0 , or

B = $(1 + 10^{(7.4-\text{pH})}) \div 1.25$ if pH is < 8.0

C = 13.5 if pH is ≥ 7.7 , or

C = $20(10^{(7.7-\text{pH})}) \div (1 + 10^{(7.4-\text{pH})})$ if the pH is < 7.7

12. IDAPA 16.01.02.250.02.e.ii. - Salmonid spawning. Water temperatures of 13 degrees C or less with a maximum daily average no greater than 9 degrees C.

13. IDAPA 16.01.02.251.01.a.and b. - Primary Contact Recreation: Waters are not to contain E.coli bacteria exceeding: a single sample of 406 E.coli organisms per 110 ml, or, a geometric mean of 126 E.coli organisms per 100ml based on a minimum of 5 samples taken every 3-5 days over a 30 day period.

14. IDAPA 16.01.02.420.01.a. - Point Source Sewage Wastewater Discharge Restrictions. BOD - the equivalent of 85% removal of the biochemical oxygen demand, but not more than a 30 day average concentration of 30 mg/l.

15. IDAPA 16.01.02.420.01.b. - Point Source Sewage Wastewater Discharge Restrictions. Suspended Solids - the equivalent of 85% removal of the suspended solids, but not more than a 30 day average concentration of 30 mg/l.

16. IDAPA 16.01.02.420.05.a. - Fecal coliform concentrations in secondary treated effluent must not exceed a geometric mean of 200/100 ml based on no more than one week's data and a minimum of 5 samples.

APPENDIX C
BASIS FOR EFFLUENT LIMITATIONS

The Clean Water Act (CWA) requires Publicly Owned Treatment Works to meet performance-based requirements (also known as technology based effluent limits) based on available wastewater treatment technology. EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that technology based effluent limits are not sufficiently stringent to meet water quality standards. In such cases, EPA is required to develop more stringent, water quality-based effluent limits designed to ensure that water quality standards are met. The draft effluent limits reflect whichever limits (technology-based or water quality-based) are more stringent. The following explains in more detail the derivation of technology based effluent limits and water quality based effluent limits.

A. Technology-based Effluent Limitations

The CWA requires Publicly Owned Treatment Works to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” that all POTWs were required to meet by July 1, 1977. EPA developed “secondary treatment” regulations which are specified in 40 CFR 133. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH. The technology based effluent limits applicable to the City of Idaho Falls are as follows:

1. 5 day Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS):

Average Monthly Limit =	30 mg/L
Average Weekly Limit =	45 mg/L
Percent Removal Requirements =	85 %

2. Federal regulations at (40 CFR § 122.45 (f)) require BOD₅ and TSS limitations to be expressed as mass based limits using the design flow of the facility. The loading is calculated as follows: concentration X design flow X 8.34.

BOD and TSS loading, monthly average = 30 mg/L X 17 mgd X 8.34 =	4,250 lbs/day
BOD and TSS loading, weekly average = 45 mg/L X 17 mgd X 8.34 =	6,380 lbs/day

3. The pH range shall be between 6.0 - 9.0 standard units.
4. Fecal Coliform Bacteria: In addition to the above, the *Idaho Water Quality Standards and Wastewater Treatment Requirements* (IDAPA16.01.02.420.05.a) require that fecal coliform concentrations in treated effluent not exceed a geometric mean of 200 colonies/100ml based on no more than one week’s data and a minimum of five samples.

B. Water Quality-based Evaluation

1. Statutory Basis for Water Quality-Based Limits

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to state waters must also comply with limitations imposed by the state as part of its certification of NPDES permits under section 401 of the CWA.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing section 301 (b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.”

The regulations require that this evaluation be made using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

2. Reasonable Potential Determination

When evaluating the effluent to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern is made. The chemical specific concentration of the effluent and ambient water and, if appropriate, the dilution available from the ambient water are factors used to project the receiving water concentration. If the projected concentration of the receiving water exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required (see Appendix B for the applicable water quality criteria).

As mentioned above, sometimes it is appropriate to allow a small area of ambient water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate ambient flow volume and the ambient water is below the criteria necessary to protect designated uses.

3. Procedure for Deriving Water Quality-Based Effluent Limits

The first step in developing a water quality based permit limit is to develop a wasteload allocation (WLA) for the pollutant. A wasteload allocation is the concentration (or loading) of a pollutant that the permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water. Wasteload allocations are determined in one of the following ways:

(a) TMDL-Based Wasteload Allocation

Where the receiving water quality does not meet water quality standards, the wasteload allocation is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point, and natural background sources, including a margin of safety, that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards. A TMDL is not required for the Snake River at Idaho Falls.

(b) Mixing Zone-Based Wasteload Allocation

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone, and the background concentrations of the pollutant.

(c) Criterion as the Wasteload Allocation:

In some cases a mixing zone cannot be authorized, either because the receiving water already exceeds the criteria or the receiving water flow is too low to provide dilution. In such cases, the criterion becomes the wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the permittee will not contribute to an exceedance of the criteria.

Once the wasteload allocation has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and water quality standards.

4. Water Quality-Based Effluent Limits

(a) **Toxic Substances**

The Idaho state water quality standards require surface waters of the state to be free from toxic substances in concentration that impair designated uses.