FACT SHEET

Public Comment Period:

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**The United States Environmental Protection Agency (EPA)
Plans To Reissue A National Pollutant Discharge Elimination System (NPDES) Permit
To Wastewater Treatment Plants For Each Of The Following Entities:**

Carey Water and Sewer District
City of Council
Country Homes Mobile Park
City of Deary
City of Elk River
City of Franklin
City of Juliaetta
City of Nezperce
North Idaho Correctional Facility
City of Pierce
City of Roberts
Santa-Fernwood Sewer District
City of Tensed
City of Troy
City of Winchester

EPA Proposes To Reissue NPDES Permit

EPA proposes to reissue the NPDES permits to the facilities referenced above. The draft permits place conditions on the discharge of pollutants from each wastewater treatment plant to waters of the United States. In order to ensure protection of water quality and human health, the permits place limits on the types and amounts of pollutants that can be discharged from each facility.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations, and other conditions for each facility
- a map and description of the discharge locations
- technical material supporting the conditions in each permit

401 Certification

EPA is requesting that the Idaho Department of Environmental Quality certify the NPDES permit for those facilities that discharge to state waters, under section 401 of the Clean Water Act. EPA will certify the NPDES permit for those facilities that discharge to Tribal Waters.

Public Comment

Persons wishing to comment on, or request a Public Hearing for the draft permit for any of these facilities may do so in writing by the expiration date of the Public Comment period. 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. 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 an appeal is submitted to the Environmental Appeals Board within 30 days.

Documents are Available for Review.

The draft NPDES permits 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). The draft permits, fact sheet, 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 permits are also available at:

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

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1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
AML	Average Monthly Limit
BOD_5	Biochemical oxygen demand, five-day
BE	Biological evaluation
°C	Degrees Celsius
cfs	Cubic feet per second
CFR	Code of Federal Regulations
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
I/I	Inflow and Infiltration
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ml	milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit
MPN	Most Probable Number
N	Nitrogen
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
OW	Office of Water
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
s.u.	Standard Units
TMDL	Total Maximum Daily Load

TRE	Toxicity Reduction Evaluation
TSD	Technical Support document (EPA, 1991)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Services
UV	Ultraviolet radiation
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WWTP	Wastewater treatment plant

I. APPLICANTS

This fact sheet provides information on the wastewater treatment plant draft NPDES permits for the following entities:

Facility	NPDES Permit Number
Carey Water and Sewer District	ID 002574-7
City of Council	ID 002008-7
Country Homes Mobile Park	ID 002530-5
City of Deary	ID 002078-8
City of Elk River	ID 002036-2
City of Franklin	ID 002556-9
City of Juliaetta	ID 002376-1
City of Nezperce	ID 002039-7
North Idaho Correctional Facility	ID 002588-7
City of Pierce	ID 002020-6
City of Roberts	ID 002691-3
Santa-Fernwood Sewer District	ID 002284-5
City of Tensed	ID 002510-1
City of Troy	ID 002360-4
City of Winchester	ID 002018-4

II. FACILITY INFORMATION

These draft permits are for the discharge of effluent from municipal wastewater treatment plants. These facilities treat primarily residential and commercial wastewater.

The facilities provide secondary treatment through either activated sludge systems or wastewater stabilization ponds (lagoons). Disinfection is provided using chlorination. Information specific for each of the treatment facilities is provided in Appendix A.

III. RECEIVING WATER

Specific receiving water information available for each of the facilities is provided in Appendix A. The information includes:

- Receiving water body
- Subbasin

- Low flow conditions
- Beneficial uses of the water body
- Identification of water quality limited segments

A. Low Flow Conditions

Flow information from the United States Geological Survey (USGS) were used to determine the flow conditions for each of the receiving waters. Where data were available, the 1 day, 10 year low flow (1Q10) and the 7 day, 10 year low flow (7Q10) were calculated for each facility. If the facility discharges seasonally, the low flow values represent the seasonal 1Q10 and 7Q10. Low flow conditions are used to do reasonable potential analyses, and to calculate water quality based effluent limits (see Appendix C and Appendix D).

B. Water Quality Standards

An NPDES permit must ensure that the discharge from the facility complies with the State/Tribe's water quality standards. A State/Tribes's water quality standards[1] 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/Tribe, 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.

Some of the facilities discharge to Tribal waters for which the Tribe has not yet adopted water quality standards. In this case, EPA's practice is to apply adjacent or downstream standards to the water body for the purpose of developing permit limitations and conditions. Therefore, the State of Idaho's water quality standards were applied to these permits.

Because the effluent limits in the draft permits are based on current water quality criteria or technology-based limits that have been shown to not cause or contribute to an exceedence of water quality standards the discharges as authorized in the draft permits will not result in degradation of the receiving water.

C. Water Quality Limited

[1] Idaho's water quality standards are contained in *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.)

Any waterbody for which the water quality does not, and/or is not expected to meet, applicable water quality standards is defined as a "water quality limited segment."

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 segments. The 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. The allocations for point sources are then incorporated into the NPDES permit.

IV. EFFLUENT LIMITATIONS

A. Basis for Permit Effluent Limits

In general, the CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards of a waterbody are being met and they may be more stringent than technology-based effluent limits. The basis for the proposed effluent limits in the draft permit are provided in Appendix B.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limitations that are in the draft permits.

1. The pH range must be between 6.5 to 9.0 standard units.

2. The monthly average effluent concentration of five-day Biochemical Oxygen Demand (BOD_5) shall not exceed 15 percent of the monthly average influent concentration of BOD_5.

3. The monthly average effluent concentration of Total Suspended Solids (TSS) shall not exceed 15 percent of the monthly average influent concentration of TSS.

4. There must be no discharge of any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.

5. Table 1, below presents the proposed average monthly, average weekly, and instantaneous maximum effluent limits for BOD_5, TSS, and escherichia coli (E. Coli), and chlorine (if applicable).

Table 1: Monthly, Weekly and Instantaneous Maximum Effluent Limitations					
Parameters	**Units**	**Average Monthly Limit**	**Average Weekly Limit**	**Maximum Daily Limit**	**Instantaneous Maximum Limit**
BOD_5	mg/L	30	45	---	---
	lbs/day	Facility Specific[1]	Facility Specific[1]	---	---
TSS	mg/L	30	45	---	---
	lbs/day	Facility Specific[1]	Facility Specific[1]	---	---
E. coli Bacteria [2]	colonies/100 ml	126 [3]	---	---	406
E. coli Bacteria [4]	colonies/100 ml	126 [3]	---	---	576
Chlorine [5]	mg/L	Facility Specific[6]	---	Facility Specific[6]	---
	lbs/day	Facility Specific[1]	---	Facility Specific[1]	---

Notes:
1 Loading (in lbs/day) is calculated for each facility as:
concentration (in mg/L) * design flow (in mgd) * conversion factor of 8.34
2 Applies to facilities that discharge to waters that are protected for primary contact recreation.
3 Based on the geometric mean of all samples taken during the month.
4 Applies to facilities that discharge to waters that are protected for secondary contact recreation.
5 In some cases, the effluent limit for chlorine is not quantifiable using EPA approved methods. In these cases, EPA will use the minimum level (ML) of 0.1 mg/L as the compliance evaluation level.
6 See Appendix D for facility specific effluent limit.

C. Compliance Evaluation Levels

In some cases, the proposed water quality based effluent limit for chlorine is below the level at which it can be accurately quantified using EPA analytical methods. In such cases, it is difficult to determine compliance with the effluent limits. The inability to measure the necessary level of detection is addressed by establishing the minimum level (ML) as the compliance evaluation level for use in reporting data to EPA. Effluent concentrations at or below the ML will be considered in compliance with the water quality based effluent limit. The ML for chlorine is 0.1 mg/L.

V. MONITORING REQUIREMENTS

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA 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 effluent and surface water data to determine if additional effluent limitations are required and/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 (DMRs) to U.S. Environmental Protection Agency (EPA).

B. Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits (MDLs) are less than the effluent limits.

Facilities described in this fact sheet range in size from a discharge of a few thousand gallons per day up to potentially 1 million gallons per day (mgd). Given this wide range in discharge volume, the draft permits require monitoring frequency and sample type which are reflective of the facility size as specified by design flow. Facilities with higher design flows are required to monitor more frequently than facilities with lower design flows. In addition, facilities with higher design flows are required to take 8-hour composite samples for BOD_5, TSS, and ammonia, whereas, smaller facilities are required to take grab samples for these parameters. If a facility discharges periodically, the monitoring schedule may be adjusted accordingly. Refer to Appendix A for specific monitoring adjustments.

Tables 2a through 2c present the monitoring requirements for the permittees in the draft permits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The monitoring samples must not be

influenced by combination with other effluent. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Table 2a: Effluent Monitoring Requirements (>0.5 - 1.0 mgd Design Flow)				
Parameter	**Unit**	**Sample Location**	**Sample Frequency[1]**	**Sample Type**
Flow	mgd	Effluent	continuous	recording
BOD_5	mg/L	Influent and Effluent	1/month	8-hour composite
	lbs/day	Influent and Effluent	1/month	calculation[2]
	% Removal	--	–	calculation[3]
TSS	mg/L	Influent and Effluent	1/month	8-hour composite
	lbs/day	Influent and Effluent	1/month	calculation[2]
	% Removal	--	–	calculation[3]
pH	standard units	Effluent	5/week	grab
E. coli Bacteria	colonies/100 ml	Effluent	5/month	grab
Temperature[4,5]	°C	Effluent	1/month	grab
Chlorine[6]	mg/L	Effluent	5/week	grab
Total Ammonia as N[4]	mg/L	Effluent	1/month	8-hour composite
Total Phosphorus as P[4,5]	mg/L	Effluent	1/month	8-hour composite
Dissolved Oxygen[4,5]	mg/L	Effluent	1/month	grab

Notes:

1 The sampling frequency may differ in the permit if the facility discharges intermittently.

2 Maximum daily loading is calculated by multiplying the concentration in mg/L by the average daily flow in mgd and a conversion factor of 8.34.

3 Percent removal is calculated using the following equation: (influent - effluent) ÷ influent.

4 Monitoring is required for one year.

5 Monitoring is required only if the receiving water is water quality limited for the parameter.

6 Applies only to those facilities that chlorinate.

Table 2b: Effluent Monitoring Requirements (>0.1 - 0.5 mgd Design Flow)				
Parameter	**Unit**	**Sample Location**	**Sample Frequency[1]**	**Sample Type**
Flow	mgd	Effluent	1/week[2]	measure[2]
BOD_5	mg/L	Influent and Effluent	1/month	8-hour composite
	lbs/day	Influent and Effluent	1/month	calculation[3]
	% Removal	--	–	calculation[4]
TSS	mg/L	Influent and Effluent	1/month	8-hour composite
	lbs/day	Influent and Effluent	1/month	calculation[3]
	% Removal	--	–	calculation[4]
pH	standard units	Effluent	1/week	grab
E. coli Bacteria	colonies/100 ml	Effluent	5/month	grab
Temperature[5, 6]	°C	Effluent	1/month	grab
Chlorine[7]	mg/L	Effluent	1/ week	grab
Total Ammonia as N[5]	mg/L	Effluent	1/month	8-hour composite
Total Phosphorus as P[5,6]	mg/L	Effluent	1/month	8-hour composite
Dissolved Oxygen[5,6]	mg/L	Effluent	1/month	grab

Table 2b: Effluent Monitoring Requirements (>0.1 - 0.5 mgd Design Flow)				
Parameter	**Unit**	**Sample Location**	**Sample Frequency[1]**	**Sample Type**

Notes:
1 The sampling frequency may differ in the permit if the facility discharges intermittently.
2 If the current permit for a facility requires that the permittee monitor flow using a continuous recording, or requires a different monitoring frequency this permit provision is retained in the draft permit.
3 Maximum daily loading is calculated by multiplying the concentration in mg/L by the average daily flow and a conversion factor of 8.34.
4 Percent removal is calculated using the following equation:
(influent - effluent) ÷ influent.
5 Monitoring is required for one year of permit of only.
6 Monitoring is required only if the receiving water is water quality limited for the parameter.
7 Applies only to those facilities that chlorinate.

Table 2c: Effluent Monitoring Requirements (up to 0.1 mgd Design Flow)				
Parameter	**Unit**	**Sample Location**	**Sample Frequency[1]**	**Sample Type**
Flow	mgd	Effluent	1/week[2]	measure[2]
BOD_5	mg/L	Influent and Effluent	1/month	grab
	lbs/day	Influent and Effluent	1/month	calculation[3]
	% Removal	--	–	calculation[4]
TSS	mg/L	Influent and Effluent	1/month	grab
	lbs/day	Influent and Effluent	1/month	calculation[3]
	% Removal	--	–	calculation[4]
pH	standard units	Effluent	1/week	grab
E. coli Bacteria	colonies/100 ml	Effluent	5/month	grab
Temperature[5, 6]	°C	Effluent	1/month	grab
Chlorine[7]	mg/L	Effluent	1/week	grab
Total Ammonia as N[5]	mg/L	Effluent	1/month	grab

Table 2c: Effluent Monitoring Requirements (up to 0.1 mgd Design Flow)				
Parameter	**Unit**	**Sample Location**	**Sample Frequency[1]**	**Sample Type**
Total Phosphorus as P[5,6]	mg/L	Effluent	1/month	grab
Dissolved Oxygen[5,6]	mg/L	Effluent	1/month	grab

Notes:

1 The sampling frequency may differ in the permit if the facility discharges intermittently.

2 If the current permit for a facility requires that the permittee monitor flow using a continuous recording, or requires a different monitoring frequency, this permit provision is retained in the draft permit.

3 Maximum daily loading is calculated by multiplying the concentration in mg/L by the average daily flow and a conversion factor of 8.34.

4 Percent removal is calculated using the following equation:
(influent - effluent) ÷ influent.

5 Monitoring is required for one year.

6 Monitoring is required only if the receiving water is water quality limited for the parameter.

7 Applies only to those facilities that chlorinate.

C. Surface Water Monitoring

Table 3 presents the proposed surface water monitoring requirements for the draft permits. The permittees should work with the IDEQ Regional Office to establish the appropriate upstream monitoring location.

Table 3: Surface Water Monitoring Requirements

Parameter	Sample Location	Sample Frequency[2]	Sample Type
Ammonia, mg/L	Upstream of treatment plant outfall	1/ quarter	grab
pH, standard units	Upstream of treatment plant outfall	1/quarter	grab
Temperature, °C	Upstream of treatment plant outfall	1/quarter	grab
Total Phosphorus as P[1]	Upstream of treatment plant outfall	1/quarter	grab
Dissolved Oxygen[1]	Upstream of treatment plant outfall	1/quarter	grab

Notes:
1 Monitoring is required only if the receiving water is water quality limited for the parameter.
2 The sampling frequency may differ in the permit if the facility discharges intermittently.

VI. SLUDGE (BIOSOLIDS) REQUIREMENTS

EPA Region 10 separates wastewater and sludge permitting. Under the CWA, EPA has the authority to issue separate sludge-only permits for the purposes of regulating biosolids. EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility 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, which means that permittees must comply with them whether or not a permit has been issued.

VII. OTHER PERMIT CONDITIONS

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the permittee to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The permittees are required to develop and implement a Quality Assurance Plan within 180 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. Operation and Maintenance Plan

The permits require the Permittee to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. Each Permittee is required to develop and implement an operation and maintenance plan for their facility within 180 days of the effective date of the final permit. The plan shall be retained on site and made available to EPA and IDEQ upon request.

C. Additional Permit Provisions

Sections II, III, and IV of the draft permits 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.

VIII. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. Biological evaluations (BEs) analyzing the effects of the

discharge from the treatment facilities on listed endangered and threatened species in the vicinity of the facilities were prepared. The BEs are available upon request. The BEs determined that issuance of these permits will not affect any of the threatened or endangered species in the vicinity of the discharges.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with the National Marine Fisheries Service (NMFS) when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. The EPA has tentatively determined that the issuance of these permits will not affect any EFH species in the vicinity of the discharges, therefore consultation is not required for this action.

C. State/Tribal Certification

Section 401 of the CWA requires EPA to seek State/Tribal certification before issuing a final permit. As a result of the certification, the State/Tribe may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

Some of the facilities discharge to Tribal waters for which the Tribe has not yet adopted water quality standards. In this case, the provisions of Section 401 of the CWA requiring State/Tribe certification of the permit do not apply. The EPA will conduct the 401 certification of these permits.

D. Permit Expiration

The permits will expire five years from the effective date of the permits.

Appendix A - Facility Information

Carey Water and Sewer District	
NPDES ID Number:	ID 002574-7
Facility Location:	½ mile east of the City of Carey
Mailing Address:	P.O. Box 187 Carey, Idaho 83320
Facility Background:	Facility's existing permit became effective July 27, 1987. Current permit application received on November 19, 2001.
Collection System Information	
Service Area:	A portion of the City of Carey
Service Area Population:	500
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	Lagoons and chlorination.
Design Flow:	Design flow of lagoons is 0.10 mgd. Effluent is periodically pumped at an average flow per discharge of 0.5 mgd.
Existing Flow:	0.03 (average daily)
Outfall Location:	latitude 43° 17' 06" N; longitude 113° 55' 48" W
Receiving Water Information	
Receiving Water:	Little Wood River. The facility discharges to one of the branches of the river; the branches merge below the City. The branch to which the facility discharges to often dry.
Subbasin:	Little Wood (HUC 17040221)
Beneficial Uses:	cold water communities, salmonid spawning, primary contact recreation
Water Quality Limited Segment:	Little Wood River (from East Canal Diversion to Silver Creek) is listed for nutrients and temperature.
Low Receiving Water Flow:	0 mgd
Additional Notes	
Discharge:	The effluent is usually land applied and is only discharged to the river as needed. The current permit allows seasonal discharge from September to April. This requirement has been retained in the proposed permit.

Basis for BOD_5/TSS Limits:	The draft permit retains secondary treatment requirements from the existing permit. Because the facility has not discharged in recent years, no existing data were available to evaluate existing treatment plant efficiency.

City of Council

NPDES ID Number:	ID 002008-7
Facility Location:	P.O. Box 606 501 N. Galena Council, Idaho 83612
Mailing Address:	500 South Hornet Creek Street Council, Idaho 83612
Facility Background:	The facility's existing permit became effective April 23, 1983. The current permit application was received on June 25, 2001

Collection System Information

Service Area:	City of Council
Service Area Population:	815
Collection System Type:	100% separated sanitary sewer

Facility Information

Treatment Train:	aerated lagoons followed by chlorination.
Design Flow:	0.4 mgd
Existing Flow:	0.34 mgd (average annual daily flow)
Months when discharge occurs:	year round
Outfall Location:	latitude: 44° 43' 15"N, longitude: 116° 26' 59"W

Receiving Water Information

Receiving Water:	Weiser River
Subbasin:	Weiser (HUC 17050124)
Beneficial Uses:	cold water communities, primary contact recreation, drinking water, and special resource water
Low Flow:	1Q10 = 16 mgd; 7Q10 = 19 mgd
Water Quality Limited Segment:	This segment of the river is listed as water quality limited for nutrients and sediment.

Additional Notes

Basis for BOD_5/TSS Limits:	Draft permit requires secondary treatment concentration limits since monitoring data show the treatment plant has in the past been able to meet secondary limits. Percent removal of 85% required for BOD_5 and TSS since poor removal efficiencies appear to be the result of excessive inflow/infiltration. Additionally, system experiences sanitary sewer overflows.
Country Home Mobile Park	
NPDES ID Number:	ID 002530-5
Facility Location:	4621 Lenville Road Moscow, Idaho 83843
Mailing Address:	P.O. Box 8416 Moscow, Idaho 83843
Facility Background:	The facility's does not currently have an NPDES permit. The current permit application was received on June 21, 2001.
Collection System Information	
Service Area:	Country Homes mobile park (37 homes)
Service Area Population:	78
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoon followed by chlorination
Design Flow:	0.001 mgd
Existing Flow:	0.001 mgd (average daily flow rate)
Months when discharge occurs:	February through April when there is at least 50:1 dilution
Outfall Location:	latitude: 46° 42' 16"N, longitude: 116° 56' 52"W
Receiving Water Information	
Receiving Water:	unnamed tributary to South Fork Palouse River
Subbasin:	Palouse (HUC 17060308)
Beneficial Uses:	cold water communities, primary contact recreation
Water Quality Limited Segment:	The unnamed tributary is not listed as water quality limited, however the South Fork Palouse River is listed for bacteria, nutrients, sediment, and temperature.
Low Flow:	No data

Additional Notes

Additional Requirements:	The draft permit only allows a discharge when there is a dilution ratio of 50:1.
Basis for BOD_5/TSS Limits:	Secondary treatment limits required since no existing data were available to evaluate existing treatment plant efficiency.

City of Deary	
NPDES ID Number:	ID 002078-8
Facility Location:	Intersection of State Highway 8 and State Highway 9, approximately 0.5 miles west of Deary
Mailing Address:	P.O. Box 236 Deary, Idaho 83823
Facility Background:	The facility's existing permit became effective May 2, 1988. The current permit application was received on July 26, 2001
Collection System Information	
Service Area:	City of Deary
Service Area Population:	552
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoons followed by chlorination/dechlorination.
Design Flow:	0.23 mgd
Existing Flow:	0.2 mgd (average annual flow)
Months when discharge occurs:	year round
Outfall Location:	latitude: 46° 08' 04" N, longitude: 116° 34' 09" W
Receiving Water Information	
Receiving Water:	Mount Deary Creek to Big Bear Creek
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation
Water Quality Limited Segment:	Mount Deary Creek and Big Bear Creek are not listed as water quality limited.
Low Flow:	no data
Additional Notes	
Basis for BOD_5/TSS limits:	Monitoring data show facility can meet secondary treatment concentration limits and 85% BOD_5 removal. No data exist for TSS percent removal.

City of Elk River	
NPDES ID Number:	ID 002036-2
Facility Location:	Landing Road Elk River, Idaho 83827
Mailing Address:	P.O. Box 36 Elk River, Idaho 83827
Facility Background:	The facility's existing permit became effective November 2, 1987. The current permit application was received on September 27, 2001
Collection System Information	
Service Area:	City of Elk River
Service Area Population:	150
Collection System Type:	combined
Facility Information	
Treatment Train:	lagoons followed by chlorination.
Design Flow:	0.08 mgd
Existing Flow:	0.02 mgd (average daily flow)
Months when discharge occurs:	The facility discharges one week in March or April when necessary.
Outfall Location:	latitude 46° 47' 5" N; longitude 116° 10' 21" W
Receiving Water Information	
Receiving Water:	Elk Creek
Subbasin:	Lower North Fork Clearwater (HUC 17060308)
Beneficial Uses:	cold water communities, primary contact recreation, salmonid spawning, drinking water
Water Quality Limited Segment:	This creek is listed as water quality limited for bacteria, nutrients, sediment and temperature.
Low Flow:	no data
Additional Notes	
Discharge:	The current permit allows seasonal discharge from November 1 to June 30. This requirement has been retained in the proposed permit.
Basis for BOD_5/TSS limits:	Secondary treatment limits required since no existing data were available to evaluate existing treatment plant efficiency.

Monitoring Requirements:	Because the facility only discharges a few weeks per year, weekly monitoring for BOD_5 and TSS is required during discharge.
City of Franklin	
NPDES ID Number:	ID 002556-9
Facility Location:	126 West 2nd South Franklin, Idaho 83237
Mailing Address:	P.O. Box 69 Franklin, Idaho 83237
Facility Background:	The facility's existing permit became effective October 18, 1983. The current permit application was received on June 4, 2001
Collection System Information	
Service Area:	City of Franklin
Service Area Population:	641
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoons followed by chlorination.
Design Flow:	0.0625 mgd
Existing Flow:	0.02 mgd (average daily flow)
Months when discharge occurs:	October - April
Outfall Location:	latitude: 42° 01' 00"N, longitude: 111° 48' 30"W
Receiving Water Information	
Receiving Water:	Cub River
Subbasin:	Middle Bear (HUC 16010202)
Beneficial Uses:	cold water communities, secondary contact recreation
Water Quality Limited Segment:	This creek is listed as water quality limited for nutrients and sediment
Low Flow:	1Q10 = 2 mgd; 7Q10 = 2 mgd (October - April)
Additional Notes	
Basis for BOD_5/TSS limits:	Monitoring data show facility can meet secondary treatment concentration and percent removal limits.

Additional Requirements:	The existing permit only allows a discharge from October through April. This requirement is retained in the proposed permit.

City of Juliaetta	
NPDES ID Number:	ID 002376-1
Facility Location:	1666 Highway 3 Juliaetta, Idaho 83535
Mailing Address:	P.O. Box 229 Juliaetta, Idaho 83535
Facility Background:	The facility's existing permit became effective June 27, 1985. The current permit application was received on June 4, 2001
Collection System Information	
Service Area:	City of Juliaetta
Service Area Population:	500
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	activated sludge, effluent polishing, chlorination.
Design Flow:	0.08 mgd
Existing Flow:	0.036 mgd (average daily flow)
Months when discharge occurs:	year round
Outfall Location:	latitude: 46° 33' 43" N, longitude: 116° 42' 33" W
Receiving Water Information	
Receiving Water:	Potlatch River
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation, salmonid spawning, and drinking water
Water Quality Limited Segment:	The Potlatch River below Bear Creek is listed as water quality limited for bacteria, dissolved oxygen, ammonia, oil and grease, nutrients, organics, pesticides, sediment, and temperature.
Low Flow:	1Q10 = 5 mgd 7Q10 = 5 mgd
Additional Notes	

Basis for BOD_5/TSS limits:	Principal treatment process is not a trickling filter or waste stabilization pond, therefore secondary treatment limits required.

City of Nezperce	
NPDES ID Number:	ID 002039-7
Facility Location:	404 Oak Street Nezperce, Idaho 83543
Mailing Address:	P.O. Box 36 Nezperce, Idaho 83543
Facility Background:	The facility's existing permit became effective December 30, 1983. The current permit application was received on August 30, 2001
Collection System Information	
Service Area:	City of Nezperce
Service Area Population:	500
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	Aerated lagoons followed by chlorination.
Design Flow:	0.09 mgd
Existing Flow:	Unknown
Months when discharge occurs:	Facility discharges a few days in the winter and spring when necessary.
Outfall Location:	latitude 46° 14' 27" N; longitude 116° 14' 35" W
Receiving Water Information	
Receiving Water:	Long Hollow Creek
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation
Water Quality Limited Segment:	Long Hollow Creek is limited for bacteria, dissolved oxygen, nutrients and sediment
Low Flow:	1Q10 = 0.2 mgd; 7Q10 = 0.5 mgd
Additional Notes	
Discharge location:	The facility discharges to tribal waters.
Additional Requirements:	The existing permit only allows a discharge when there is a dilution ratio of 10:1. This requirement is retained in the proposed permit.
Basis for BOD_5/TSS limits:	Limited data available indicate that facility can meet secondary treatment concentration limits and 85 percent BOD_5 removal. No data exist for TSS percent removal.

Monitoring Requirements:	Because the facility only discharges a few days per year, weekly monitoring for BOD_5 and TSS is required during discharge.

North Idaho Correctional Facility	
NPDES ID Number:	ID 002588-7
Facility Location:	Five miles west of Cottonwood, Idaho, on Cottonwood Butte Road
Mailing Address:	Route 3, P.O. Box 147 Cottonwood, Idaho 83522
Facility Background:	The facility does not have a permit. The current permit application was received on October 5, 2001
Collection System Information	
Service Area:	Correctional Institution
Service Area Population:	357
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoons, chlorination, then settling.
Design Flow:	unknown
Existing Flow:	0.03 (average daily)
Months when discharge occurs:	May through November
Outfall Location:	unknown
Receiving Water Information	
Receiving Water:	unnamed creek which flows into Lawyer Creek then to the Clearwater River 30 miles downstream
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation,
Water Quality Limited Segment:	The unnamed creek is not listed as water quality limited. However, Lawyer Creek is listed as limited for bacteria, dissolved oxygen, ammonia, nutrients, oil and grease, sediment, and temperature.
Low Flow:	Lawyer Creek: 1Q10 = 1.2 mgd; 7Q10 = 1.2 mgd
Additional Notes	

Basis for BOD_5/TSS limits:	Secondary treatment limits required since no existing data were available to evaluate existing treatment plant efficiency.

City of Pierce	
NPDES ID Number:	ID 002020-6
Facility Location:	13 Fromelt Road Pierce, Idaho 83546
Mailing Address:	P.O. Box 356 Pierce, Idaho 83546
Facility Background:	The facility's existing permit became effective December 15, 1987. The current permit application was received on May 29, 2001
Collection System Information	
Service Area:	Cities of Pierce and Judgetown
Service Area Population:	780
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	mechanical package plant, chlorination, dechlorination is provided by a 12 hour detention tank.
Design Flow:	0.3 mgd
Existing Flow:	0.19 (average daily)
Months when discharge occurs:	year round
Outfall Location:	latitude: 46° 29.5' N, longitude: 115° 48.05' W
Receiving Water Information	
Receiving Water:	Orofino Creek to the Clearwater River
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation, salmonid spawning
Water Quality Limited Segment:	This creek is not listed as water quality limited.
Low Flow:	1Q10 = 6 mgd 7Q10 = 7 mgd
Additional Notes	
Inflow and Infiltration	A consent order from the Idaho Department of Environmental Quality requires the facility to conduct an inflow and infiltration study.

Basis for BOD_5/TSS limits:	Principal treatment process is not a trickling filter or waste stabilization pond, therefore secondary treatment limits required.
City of Roberts	
NPDES ID Number:	ID 002691-3
Facility Location:	---
Mailing Address:	P.O. Box 242 Roberts, Idaho 83444
Facility Background:	The current permit application was received on October 26, 2001.
Collection System Information	
Service Area:	City of Roberts
Service Area Population:	627
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	three lagoons followed by chlorination.
Design Flow:	0.1 mgd
Existing Flow:	0.03 (average daily)
Months when discharge occurs:	year round
Outfall Location:	latitude: 43° 42' 48" N, longitude: 112° 7' 9" W
Receiving Water Information	
Receiving Water:	Roberts Slough to the Snake River
Subbasin:	Palouse (HUC 17040201)
Beneficial Uses:	cold water communities, primary contact recreation
Water Quality Limited Segment:	The slough is not listed as water quality limited.
Low Flow:	no data
Additional Notes	
Basis for BOD_5/TSS limits:	Secondary treatment limits required since no DMR data exist to evaluate treatment plant performance.

Santa-Fernwood Sewer District	
Facility:	Santa-Fernwood Sewer District
NPDES ID Number:	ID 002284-5
Facility Location:	P.O. Box 215 Fernwood, ID 83830
Mailing Address:	65290 Hwy 3 South Fernwood, ID 83830
Background:	The City's existing permit became effective on December 29, 1989. The current permit application was received on September 12, 2001.
Collection System Information	
Service Area:	Cities of Santa and Fernwood
Service Area Population:	700
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	Wastewater stabilization ponds followed by chlorination. During spring melt the effluent from the chlorine contact chamber is discharged directly to the St. Maries River. In the summer, during the irrigation season, effluent from the chlorine contact chamber is applied to overland flow fields where hay is grown. The discharge from the flow fields is collected in a catch basin which then discharges to the St. Maries River.
Design Flow:	0.2 mgd
Existing Flow:	0.14 mgd (average daily); 0.2 mgd (maximum daily)
Outfall Location:	latitude 47° 10' 35" N; longitude 116° 29' 30" W
Receiving Water Information	
Receiving Water:	St. Maries River
Subbasin:	St. Joe (HUC 17010304)
Beneficial Uses:	cold water communities, primary contact recreation
Water Quality Limited Segment:	Downstream of discharge, St. Maries River (Mashburn to St. Joe River) is listed for nutrients, sediment, and temperature.
Low Receiving Water Flow:	1Q10 = 29 cfs; 7Q10 = 33 cfs.
Additional Notes	

Basis for BOD_5/TSS Limits:	Draft permit retains secondary treatment requirements from existing permit. Prior to 1999, facility was in compliance with limits.

City of Tensed	
NPDES ID Number:	ID 002510-1
Facility Location:	211 "C" Street Tensed, Idaho 83870
Mailing Address:	P.O. Box 126 Tensed, Idaho 83870
Facility Background:	The facility does not currently have a permit. The current permit application was received on May 29, 2001.
Collection System Information	
Service Area:	City of Tensed
Service Area Population:	123
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoons with chlorination/dechlorination.
Design Flow:	unknown
Existing Flow:	0.03 (average daily)
Months when discharge occurs:	March, April, May, November, December, January
Outfall Location:	latitude 47° 9' 26" N; longitude 116° 55' 34" W
Receiving Water Information	
Receiving Water:	Hangman Creek
Subbasin:	Hangman (HUC 170010306)
Beneficial Uses:	cold water communities, secondary contact recreation,
Water Quality Limited Segment:	This creek is not listed as water quality limited because it is on tribal land. However, IDEQ has listed Hangman Creek as limited for bacteria, nutrients, and sediment.
Low Flow:	1Q10 = 0.6 mgd; 7Q10 = 0.8 mgd (March - May and November - January)
Additional Notes	
Discharge location:	The facility is located on tribal land.
Basis for BOD_5/TSS limits:	Secondary treatment limits required since no existing data were available to evaluate existing treatment plant efficiency.

City of Troy	
NPDES ID Number:	ID 002360-4
Facility Location:	Highway 8 Troy, Idaho 83871
Mailing Address:	P.O. Box 595 Troy, Idaho 83871
Facility Background:	The facility's existing permit became effective August 1, 1988. The current permit application was received on June 21, 2001.
Collection System Information	
Service Area:	City of Troy
Service Area Population:	653
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	lagoons with clarifier followed by chlorination.
Design Flow:	0.19 mgd
Existing Flow:	0.11 (average daily)
Months when discharge occurs:	year round
Outfall Location:	latitude: 46° 43' 53" N, longitude: 116° 45' 22" W
Receiving Water Information	
Receiving Water:	West Fork Little Bear Creek
Subbasin:	Palouse (HUC 17060108)
Beneficial Uses:	cold water communities, primary contact recreation,
Water Quality Limited Segment:	This creek is not listed as water quality limited. However, Little Bear Creek, which is downstream from the West Fork, is listed as limited for bacteria, sediment and temperature.
Low Flow:	no data
Additional Notes	
Basis for BOD_5/TSS limits:	Monitoring data show facility can meet secondary treatment concentration and percent removal limits.

City of Winchester	
NPDES ID Number:	ID 002018-4
Facility Location:	570 North Shore Road Winchester, Idaho 83555
Mailing Address:	P.O. Box 245 Winchester, Idaho 83555
Facility Background:	The facility's existing permit became effective July 1, 1975. The current permit application was received on May 18, 2001. The City constructed a new treatment plant that came on-line in October 2001.
Collection System Information	
Service Area:	City of Winchester
Service Area Population:	300
Collection System Type:	100% separated sanitary sewer
Facility Information	
Treatment Train:	Activated sludge and UV disinfection. Chlorination used as needed, which is generally during periods of high flow.
Design Flow:	0.035 mgd
Existing Flow:	0.025 (average daily)
Months when discharge occurs:	year round
Outfall Location:	latitude: 46° 14' 17" N, longitude: 116° 37' 09.09"
Receiving Water Information	
Receiving Water:	Lapwai Creek
Subbasin:	Clearwater (HUC 17060306)
Beneficial Uses:	cold water communities, primary contact recreation,
Water Quality Limited Segment:	This creek is not listed as water quality limited because it is on tribal land. However, IDEQ has listed Lapwai Creek, to the reservation boundary, as limited for bacteria, dissolved oxygen, nutrients, sediment and temperature.
Low Flow:	1Q10 = 1.5 mgd; 7Q10 = 1.7 mgd
Additional Notes	

Basis for BOD_5/TSS limits:	Principal treatment process is not a trickling filter or waste stabilization pond, therefore secondary treatment limits required.
Discharge location:	The facility is located on tribal land.

Appendix B - Basis for Effluent Limitations

The Clean Water Act (CWA) requires Publicly Owned Treatment Works (POTW) to meet effluent limits based on available wastewater treatment technology. These types of effluent limits are called secondary treatment effluent limits.

Non-municipal dischargers are referred to as Treatment Works Treating Domestic Sewage (TWTDS). Performance based effluent limitations for TWTDS discharges have not been promulgated by EPA. In these dischargers, effluent limitations are developed using Best Professional Judgement (BPJ). The authority for BPJ is contained in Section 402(a)(1) of the CWA. The NPDES regulations at 40 CFR § 125.3 define what factors must be considered when establishing BPJ-based conditions in a permit. For non-municipal dischargers, BPJ-based limits have been incorporated into the draft permit based on the secondary treatment standards for municipal wastewater treatment plants.

EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that secondary treatment 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 which are designed to ensure that the water quality standards of the receiving water are met.

Secondary treatment effluent limits may not limit every parameter that is in an effluent. For example, secondary treatment effluent limits for POTWs have only been developed for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH, yet effluent from a POTW may contain other pollutants such as bacteria, chlorine, ammonia, or metals depending on the type of treatment system used and the service area of the POTW (i.e., industrial facilities as well as residential areas discharge into the POTW). When technology based effluent limits do not exist for a particular pollutant expected to be in the effluent, EPA must determine if the pollutant may cause or contribute to an exceedance of the water quality standards for the water body. If a pollutant causes or contributes to an exceedance of a water quality standard, water quality-based effluent limits for the pollutant must be incorporated into the permit.

The following discussion explains in more detail the derivation of technology based effluent limits, and water quality based effluent limits. Part A discusses technology based effluent limits, Part B discusses water quality based effluent limits, and Part C discusses facility specific limits.

A. Technology Based Effluent Limits

1. BOD_5, TSS and pH

Secondary Treatment

The CWA requires POTWs 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 BOD_5, TSS, and pH. The secondary treatment effluent limits are listed in Table B-1.

Table B-1: Secondary Treatment Effluent Limits

Parameter	Average Monthly Limit	Average Weekly Limit	Range
BOD_5	30 mg/L	45 mg/L	---
TSS	30 mg/L	45 mg/L	---
Removal Rates for BOD_5 and TSS	85%	---	---
pH	---	---	6.0 - 9.0 s.u.

Treatment Equivalent to Secondary

The regulations include special considerations, referred to as "treatment equivalent to secondary (TES)", for waste stabilization ponds and trickling filters. The regulations allow alternative limits for BOD_5 and TSS for facilities using trickling filters or waste stabilization ponds provided the following requirements are met (40 CFR 133.101(g), and 40 CFR 133.105(d)):

- The BOD_5 and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of the effluent quality described in section 1 above (Secondary Treatment Effluent Limits).

- A trickling filter or waste stabilization pond is used as the principal treatment process.
- The treatment works provide significant biological treatment of municipal wastewater (i.e., a minimum of 65% reduction of BOD_5 is consistently attained).

Reduced Percent Removal Requirements for Less Concentrated Influent Wastewater

In accordance with 40 CFR § 133.103 (d), treatment works that receive less concentrated wastes from separate sewer systems can qualify to have their percent removal limits reduced provided that all of the following conditions are met:

- The facility can consistently meet its permit effluent concentration limits but cannot meet its percent removal limits because of less concentrated influent water
- The facility would have been required to meet significantly more stringent limitations than would otherwise be required by the concentration-based standards and
- The less concentrated influent is not the result of excessive inflow/infiltration (I/I).

Draft Permit Limits

The past five years of monitoring data for each of the facilities were examined to determine if any considerations (such as TES or reduced percent removal requirements) were necessary in designating effluent limits for BOD_5 and TSS.

All of the permits require secondary treatment effluent limits for BOD_5 and TSS. In most cases, the data review revealed that the facility could consistently achieve secondary treatment limits, and therefore no considerations for "TES"or "less concentrated influent wastewater" were necessary.

In some cases, the facility may not meet secondary treatment limits, but the conditions required for TES or reduced percent removals were not met. In these cases, alternative concentration limits or reduced percent removal limits could not be given.

For some facilities, there were no existing data available to assess the efficiency of

the wastewater treatment plant; this was particularly the case for TSS percent removal. With no data to evaluate, the permit requires secondary treatment limits. The permit may be modified in the future if the data collected show that the facility cannot meet secondary limits, but qualifies for TES limits or reduced percent removal requirements.

2. Chlorine

A technology-based average monthly chlorine effluent limitation of 0.5 mg/L for wastewater treatment plants is derived from standard operating practices. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time. A treatment plant that provides adequate chlorination contact time can meet the 0.5 mg/L limit on a monthly average basis. In addition to average monthly limits (AMLs), NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. The AWL is derived as 1.5 times the AML, resulting in an AWL for chlorine of 0.75 mg/L.

3. Mass-based Limits

The federal regulation at 40 CFR § 122.45 (f) require BOD_5, TSS, and chlorine limitations to be expressed as mass based limits using the design flow of the facility. The mass based limits are expressed in lbs/day and are calculated as follows:

Mass based limit (lbs/day) = concentration limit (mg/L) x design flow (mgd) x 8.34

B. Water Quality-Based Effluent Limits

The following discussion is divided into four sections. Section 1 discusses the statutory basis for including water quality based effluent limits in NPDES permits, section 2 discusses the procedures used to determine if water quality based effluent limits are needed in an NPDES permit, section 3 discusses the procedures used to develop water quality based effluent limits, and section 4 discusses the specific water quality based limits.

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/tribal waters must also comply with limitations imposed by the state/tribe 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/tribal water quality standard, including state/tribal 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 Analysis

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 receiving water and, if appropriate, the dilution available from the receiving 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.

Sometimes it is appropriate to allow a small area of receiving 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 receiving water flow volume and the receiving water is below the chemical specific numeric criterion necessary to protect the designated uses of the water body. Mixing zones must be authorized by the Idaho Department of Environmental Quality.

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.

In cases where a mixing zone is not authorized, either because the receiving water already exceeds the criterion, the receiving water flow is too low to provide dilution, or the state/tribe does not authorize one, the criterion becomes the WLA. Establishing the criterion as the wasteload allocation ensures that the permittee will not contribute to an exceedance of the criterion. The wasteload allocations have been determined for pH and E. coli bacteria in this way because the state/tribe does not generally authorize mixing zones for these pollutants. For these particular parameters, the wasteload allocation translates directly into the

effluent limit without any statistical conversion.

4. Specific Water Quality-Based Effluent Limits

(a) Toxic Substances

The Idaho Water Quality Standards require surface waters of the state to be free from toxic substances in concentrations that impair designated uses. Because there are no significant industrial discharges to the facilities, and concentrations of priority pollutants from cities without a significant industrial component are low, it is anticipated that toxicity will not be a problem in the facility discharges. Therefore, water quality-based effluent limits have not been proposed for the draft permits.

(b) Floating, Suspended or Submerged Matter/Oil and Grease

The Idaho Water Quality Standards require surface waters of the state to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions that may impair designated beneficial uses. A narrative condition is proposed for the draft permits that states there must be no discharge of floating solids or visible foam or oil and grease other than trace amounts.

(c) Excess Nutrients/Phosphorus

The Idaho Water Quality Standards require surface waters of the state be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.

If a facility discharges to a receiving water listed as water quality limited for nutrients, and a TMDL has not been developed, the draft permit requires effluent and receiving water monitoring for phosphorus. This information can be used by the State when it develops the TMDL. However, if a nutrient wasteload allocation from an EPA approved TMDL is available then it is incorporated into the draft permit.

(d) Sediment/Total Suspended Solids (TSS)

The draft permits include technology-based limits for TSS. If a facility discharges to a receiving water listed as water quality limited for sediment, the sediment wasteload allocation from the TMDL (if approved by the EPA) is incorporated into the draft permit limits.

(e) pH

The Idaho Water Quality Standards require surface waters of the state to have a pH value within the range of 6.5 - 9.5 standard units. It is anticipated that mixing zones will not be authorized for the water quality-based criterion for pH. Therefore, this criterion must be met before the effluent is discharged to the receiving water. The technology-based effluent limits for pH are 6.0 - 9.0 standard units. These limits must be met before the effluent is discharged to the receiving water. To ensure that both water quality-based requirements and technology-based requirements are met, the draft permits incorporate the lower range of the water quality standards (6.5 standard units) and the upper range of the technology-based limits (9.0 standard units).

(f) Dissolved Oxygen (DO)

The Idaho Water Quality Standards require the level of DO to exceed 6 mg/L at all times for water bodies that are protected for aquatic life use. Further, during salmonid spawning and incubation periods, the one day minimum intergravel DO must exceed 5 mg/L and the seven day average intergravel DO must exceed 6 mg/L.

If a facility discharges to a receiving water listed as water quality limited for DO, and a TMDL has not been developed, the draft permit requires effluent and receiving water monitoring for DO. This information can be used by the State when it develops the TMDL. However, if a DO wasteload allocation from an EPA approved TMDL is available then it is incorporated into the draft permit.

(g) Temperature

The Idaho Water Quality Standards require ambient water temperatures of 22°C or less with a maximum daily average of no greater than 19°C for cold

water biota protection. Further, water temperatures of 13°C or less with a maximum daily average not greater than 9°C are required for salmonid spawning use during the spawning and incubation periods.

If a facility discharges to a receiving water listed as water quality limited for temperature, and a TMDL has not been developed, the draft permit requires effluent and receiving water monitoring for temperature. This information can be used by the State when it develops the TMDL. However, if a temperature wasteload allocation from an EPA approved TMDL is available then it is incorporated into the draft permit.

(h) Ammonia

The Idaho Water Quality Standards contain water quality criteria to protect aquatic life, including salmonids, against short term and long term adverse impacts from ammonia. Currently, there are no ammonia data for the facilities to determine if ammonia may cause or contribute to a water quality standard violation. Since the data are not available to determine if water quality-based effluent limits are required for ammonia, the draft permits do not propose effluent limits for ammonia. However, the draft permits require effluent sampling for ammonia, and surface water sampling for ammonia, pH, and temperature. These data will be used to determine if an ammonia limit is needed for the effluent discharge for the next permit.

(i) Escherichia Coli (E. Coli) Bacteria

According to the Idaho Water Quality Standards, waters designated for primary contact recreation are not to contain E. coli bacteria significant to the public health in concentrations exceeding:

a. A single sample of four hundred and six E. coli organisms per one hundred ml; or
b. A geometric mean of one hundred and twenty six E. coli organisms per one hundred ml based on a minimum of five samples taken, every three to five days, over a thirty day period.

Waters that are designated for secondary contact recreation are not to contain E. coli bacteria significant to the public health in concentrations

exceeding:

a. A single sample of five hundred and seventy six E. coli organisms per one hundred ml; or
b. A geometric mean of one hundred and twenty six E. coli organisms per one hundred ml based on a minimum of five samples taken, every three to five days, over a thirty day period.

It is anticipated that mixing zones will not be authorized for bacteria, therefore, the criteria must be met before the effluent is discharged to the receiving water. The proposed water quality-based effluent limits in the draft permits include an average monthly limit of 126 organisms/100 ml and an instantaneous maximum limit of either 406 organisms/100 ml or 576 organisms/100 ml, depending on whether the facility is discharging to waters designated for primary or secondary contact recreation.

(j) Total Residual Chlorine

The Idaho Water Quality Standards contain water quality criteria to protect aquatic life against short term and long term adverse impacts from chlorine. The facilities use chlorine disinfection. A reasonable potential analysis was conducted for each facility to determine if the discharge has the potential to exceed Idaho Water Quality Standards. The results indicated that the facilities would have the potential to exceed water quality criterion. Therefore, the draft permits include water quality-based chlorine limits. For additional information on the reasonable potential analysis see appendix C, for information on calculating effluent limits see appendix D.

Appendix C - Reasonable Potential Determination

To determine if a water quality based effluent limitation is required, the receiving water concentration of pollutants is determined downstream of where the effluent enters the receiving water. If the projected receiving water concentration is greater than the applicable numeric criterion for a specific pollutant, there is reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard and an effluent limit must be incorporated into the NPDES permit. The receiving water concentration is determined using the following mass balance equation:

$C_d * Q_d = (C_e * Q_e) + (C_u * Q_u)$, which can be rearranged as follows:

$$C_d = \frac{(C_e * Q_e) + (C_u * Q_u)}{Q_d}$$

C_d = receiving water concentration downstream of the effluent discharge
$Q_d = Q_e + Q_u$ = receiving water flow downstream of the effluent discharge
C_e = maximum projected effluent concentration
Q_e = maximum effluent flow
C_u = upstream concentration of pollutant
Q_u = upstream low flow

Flow Conditions / Mixing Zones

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* at IDAPA 16.01.02.060 allow twenty-five percent (25%) of the receiving water to be used for dilution for aquatic life criteria. The flows used to evaluate compliance with the criteria are:

- The 1 day, 10 year low flow (1Q10). This flow is used to protect aquatic life from acute effects. It represents the lowest daily flow that is expected to occur once in 10 years.

- The 7 day, 10 year low flow (7Q10). This flow is used to protect aquatic life from chronic effects. It the lowest 7 day average flow expected to occur once in 10 years.

In accordance with state water quality standards, only the Idaho Department of Environmental Quality may authorize mixing zones. The reasonable potential calculations are based on an assumed mixing zone of 25% for aquatic life. If the State does not authorize a mixing zone in its 401 certification, the permit limits will be re-calculated to ensure compliance with the standards at the point of discharge.

When a mixing zone (%MZ) is allowed, the mass balance equation becomes:

$$C_d = \frac{(C_e * Q_e) + (C_u * (Q_u * \%MZ))}{Q_e + (Q_u * \%MZ)}$$

Maximum Projected Effluent Concentration

The CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. The technology-based chlorine limit is 0.5 mg/L (average monthly limit). At a minimum, facilities must meet the technology-based effluent limit. When doing a reasonable potential calculation to determine if the technology-based chlorine limit would be protective of water quality standards it was assumed that the maximum projected effluent concentration was 0.5 mg/L (500 µg/L).

Reasonable Potential Calculations

The following is an example to illustrate the calculations used to determine if chlorine has the reasonable potential to cause or contribute to an exceedance of the water quality standard. Table C-1 summarizes the results of the reasonable potential calculations for each facility.

Information and assumptions for this example are:

- Facility is discharging at a maximum chlorine concentration of 500 ug/L
- Wastewater Treatment Plant Design Flow = 5 mgd
- Low Flow Conditions:
  1Q10 = 50 mgd (used to evaluate acute conditions)
  7Q10 = 200 mgd (used to evaluate chronic conditions)
- The upstream concentration of chlorine is assumed to be zero since there are no sources of chlorine upstream of the discharge.
- Percent of the river available for mixing is 25%

(1) Determine if there is a reasonable potential for the acute aquatic life criterion to be violated.

MZ = 25% (0.25)
C_e = 500 µg/L
Q_e = 5 mgd
C_u = 10 µg/L
Q_u = 50 mgd

$$C_d = \frac{(500 * 5) + (0 * (50 * 0.25))}{5 + (50 * 0.25)} = 142.9 \text{ µg/L}$$

Since 142.9 µg/L is greater than the acute aquatic life criterion (19 µg/L), there is a reasonable potential for the effluent to cause an exceedance to the water quality standard. Therefore, a water quality based effluent limit is required.

(2) Determine if there is a reasonable potential for the chronic aquatic life criterion to be violated.

MZ = 25% (0.25)
C_e = 500 µg/L
Q_e = 5 mgd
C_u = 10 µg/L
Q_u = 200 mgd

$$C_d = \frac{(500 * 5) + (0 * (200 * 0.25))}{5 + (200 * 0.25)} = 45.5 \text{ µg/L}$$

Since 45.5 µg/L is greater than the chronic aquatic life criterion (11 µg/L), there is a reasonable potential for the effluent to cause an exceedance to the water quality standard. Therefore, a water quality based effluent limit is required.

TABLE C-1: Reasonable Potential Determination

Facility	Max. Projected Effluent Conc. (C_e), µg/L	Effluent Flow (Q_e), mgd	Upstream concentration (C_u), µg/L	Upstream Flow (Q_u), mgd		Mixing Zone Size (MZ)	Downstream concentration, C_d, µg/L		Does C_d exceed acute or chronic criteria?
				1Q10	7Q10		Acute	Chronic	
Carey Water and Sewer District	500	0.1	0	0	0	25%	500	500	yes
City of Council	500	0.4	0	16	19	25%	45	38	yes
Country Home Mobile Park	500	0.001	0	50:1 dilution[1]		25%	37	37	yes
City of Deary	500	0.23	0	no data[2]		25%	500	500	yes
City of Elk River	500	0.08	0	no data[2]		25%	500	500	yes
City of Franklin	500	0.0625	0	1.5	1.6	25%	72	69	yes
City of Juliaetta	500	0.08	0	3.2	3.2	25%	45	45	yes
City of Nezperce	500	0.09	0	10:1 dilution[1]		25%	143	143	yes
North Idaho Correctional Institution	500	0.03	0	0.8	0.8	25%	67	67	yes
City of Pierce	500	0.3	0	5.8	6.8	25%	86	75	yes
City of Roberts	500	0.1	0	no data[2]		25%	500	500	yes
Santa-Fernwood	500	0.2	0	19	21	25%	20	18	yes
Tensed	500	0.03	0	0.4	0.5	25%	118	94	yes
City of Troy	500	0.19	0	no data[2]		25%	500	500	yes
City of Winchester	500	0.035	0	1.0	1.1	25%	63	57	yes

Notes:
1. Facility is allowed to discharge only when minimum river to effluent dilution ratio is met. This dilution ratio is used to determine if reasonable potential exists to cause or contribute to an exceedance of a water quality standard.
2. Receiving waters with no flow data were assumed to have a low flow of 0.

To support the implementation of EPA's regulations for controlling the discharge of toxicants, EPA developed the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991). The following is a summary of the procedures recommended in the TSD in deriving water quality-based effluent limitations for toxicants. This procedure translates water quality criteria for chlorine and ammonia to "end of the pipe" effluent limits.

Step 1- Determine the WLA

The acute and chronic aquatic life criteria are converted to acute and chronic waste load allocations (WLA_{acute} or $WLA_{chronic}$) for the receiving waters based on the following mass balance equation:

$$Q_dC_d = Q_eC_e + Q_uC_u$$

Q_d = downstream flow = $Q_u + Q_e$
C_d = aquatic life criteria that cannot be exceeded downstream
Q_e = effluent flow
C_e = concentration of pollutant in effluent = WLA_{acute} or $WLA_{chronic}$
Q_u = upstream flow
C_u = upstream background concentration of pollutant

Rearranging the above equation to determine the effluent concentration (C_e) or the wasteload allocation (WLA) results in the following:

$$C_e = WLA = \frac{Q_dC_d - Q_uC_u}{Q_e} = \frac{C_d(Q_u + Q_e) - Q_uC_u}{Q_e}$$

when a mixing zone is allowed, this equation becomes:

$$C_e = WLA = \frac{C_d(Q_u \times \%MZ) + C_dQ_e}{Q_e} - \frac{Q_uC_u(\%MZ)}{Q_e}$$

Step 2 - Determine the LTA

The acute and chronic WLAs are then converted to Long Term Average concentrations (LTA_{acute} and $LTA_{chronic}$) using the following equations:

$$LTA_{acute} = WLA_{acute} \times e^{[0.5\sigma^2 - z\sigma]}$$

where,
σ^2 = $\ln(CV^2 + 1)$
z = 2.326 for 99th percentile probability basis
CV = coefficient of variation = standard deviation/mean

$LTA_{chronic} = WLA_{chronic} \times e^{[0.5\sigma^2 - z\sigma]}$

where,

σ^2 = $\ln(CV^2/4 + 1)$
z = 2.326 for 99th percentile probability basis
CV = coefficient of variation = standard deviation/mean

Step 3 - Most Limiting LTA

To protect a waterbody from both acute and chronic effects, the more limiting of the calculated LTA_{acute} and $LTA_{chronic}$ is used to derive the effluent limitations. The TSD recommends using the 95th percentile for the Average Monthly Limit (AML) and the 99th percentile for the Maximum Daily Limit (MDL).

Step 4 - Calculate the Permit Limits

The maximum daily limit (MDL) and the average monthly limit (AML) are calculated as follows:

$MDL = LTA_{chronic} \times e^{[z\sigma - 0.5\sigma^2]}$
where,
σ^2 = $\ln(CV^2 + 1)$
z = 2.326 for 99th percentile probability basis
CV = coefficient of variation

$AML = LTA_{chronic} \times e^{[z\sigma - 0.5\sigma^2]}$
where,
σ^2 = $\ln(CV^2/n + 1)$
z = 1.645 for 95th percentile probability basis
CV = coefficient of variation = standard deviation/mean
n = number of sampling events required per month for chlorine = 20

The results of the above calculations for each of the facilities are summarized in Table D-1 below.

TABLE D-1: Effluent Limit Calculation

Facility	Criteria (µg/L)		CV	Q_u (mgd)		MZ	Q_e (mgd)	C_u (µg/L)	WLA (µg/L)		LTA (µg/L)		MDL (µg/L)	AML (µg/L)
	Acute	Chronic		1Q10	7Q10				Acute	Chronic	Acute	Chronic		
Carey Water and Sewer District	19	11	0.6	0	0	25%	0.1	0	19	11	6	6	18	7
City of Council	19	11	0.6	16	19	25%	0.4	0	211	144	68	76	211	84
Country Home Mobile Park	19	11	0.6	50:1 dilution		25%	0.001	0	257	149	82	78	244	97
City of Deary	19	11	0.6	no data[1]		25%	0.23	0	19	11	6	6	18	7
City of Elk River	19	11	0.6	no data[1]		25%	0.08	0	19	11	6	6	18	7
City of Franklin	19	11	0.6	1.5	1.6	25%	0.0625	0	132	79	42	42	130	52
City of Juliaetta	19	11	0.6	3.2	3.2	25%	0.08	0	211	122	68	64	201	79
City of Nezperce	19	11	0.6	10:1 dilution		25%	0.09	0	67	39	21	20	63	25
North Idaho Correctional Institution	19	11	0.6	0.8	0.8	25%	0.03	0	142	82	46	43	135	53
City of Pierce	19	11	0.6	5.8	6.8	25%	0.3	0	111	73	36	39	111	44
City of Roberts	19	11	0.6	no data[1]		25%	0.1	0	19	11	6	6	18	7
Santa-Fernwood	19	11	0.6	19	21	25%	0.2	0	464	304	149	160	464	184
Tensed	19	11	0.6	0.4	0.5	25%	0.03	0	80	58	26	31	80	32
City of Troy	19	11	0.6	no data[1]		25%	0.19	0	19	11	6	6	18	7
City of Winchester	19	11	0.6	1.0	1.1	25%	0.035	0	151	97	48	51	151	60

Q_u = upstream flow
CV = coefficient of variation
MZ = mixing zone

Q_e = effluent flow
C_u = upstream concentration
WLA = wasteload allocation

LTA = long term average
MDL = maximum daily limit
AML = average monthly limit

Notes:
1. Receiving waters with no flow data were assumed to have a low flow of 0.

Location of Idaho Facilities