



Fact Sheet

**The U.S. Environmental Protection Agency (EPA)
Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit to
Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:**

**Eastern Idaho Regional Wastewater Treatment Authority
Oxbow Wastewater Treatment Plant
101 S. Emerson
Shelley, Idaho 83274**

Public Comment Start Date: December 11, 2013
Public Comment Expiration Date: January 10, 2014

Technical Contact: - John Drabek, 206-553-8257, drabek.john@epa.gov
1-800-424-4372 ext. 3-8257 (within Region 10)
drabek.john@epa.gov

The EPA Proposes To Reissue NPDES Permit

The EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. 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 from the facility.

This Fact Sheet includes:

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

State Certification

The EPA is requesting that the Idaho Department of Environmental Quality (IDEQ) certify the NPDES permit for this facility, under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Idaho Department of Environmental Quality -
Pocatello Regional Office -
444 Hospital Way, No. 300 -
Pocatello, ID 83201 -

Public Comment

Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility 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 the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. 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 substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting the EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at "<http://EPA.gov/r10earth/waterpermits.htm>."

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OWW-130
Seattle, Washington 98101
(206) 553-0523 or -
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington) -

The fact sheet and draft permits are also available at:

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OWW-130
Seattle, Washington 98101
(206) 553-0523 or -
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington) -

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

Idaho Department of Environmental Quality -
Pocatello Regional Office -
444 Hospital Way, No. 300 -
Pocatello, ID 83201 -
ph: (208) 236-6160 -
fx: (208) 236-6168 -

Acronyms	6
I. Applicant	9
A. General Information	9 -
B. Permit History.....	9 -
II. Facility Information	9
A. Treatment Plant Description	9 -
B. Compliance History.....	10 -
III. Receiving Water	10
A. Low Flow Conditions	10 -
B. Water Quality Standards.....	11 -
C. Water Quality Limited Waters	12 -
IV. Effluent Limitations	13
A. Basis for Effluent Limitations	13 -
B. Proposed Effluent Limitations.....	13 -
C. Compliance Schedule	15 -
V. Monitoring Requirements	17
A. Basis for Effluent and Surface Water Monitoring.....	17 -
B. Effluent Monitoring.....	18 -
C. Monitoring and Reporting	19 -
VI. Sludge (Biosolids) Requirements	20
VII. Other Permit Conditions	20
A. Quality Assurance Plan	20 -
B. Operation and Maintenance Plan.....	20 -
C. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection - System	20 -
D. Standard Permit Provisions	21 -
VIII. Other Legal Requirements	21
A. Endangered Species Act	21 -
B. Essential Fish Habitat	22 -
C. State Certification	22 -
D. Permit Expiration.....	22 -
IX. References	22
Appendix A: Facility Information	24
Appendix B: Water Quality Criteria Summary	26
A. General Criteria (IDAPA 58.01.02.200)	26 -
B. Numeric Criteria for Toxics (IDAPA 58.01.02.210).....	26 -
C. Surface Water Criteria To Protect Aquatic Life Uses (IDAPA 58.01.02.250).....	26 -

- D. - Surface Water Quality Criteria For Recreational Use Designation (IDAPA 58.01.02.251) - 27 -

Appendix C: Low Flow Conditions and Dilution 29

- A. - Low Flow Conditions 29 -
- B. - Mixing Zones and Dilution..... 29 -

Appendix D: Basis for Effluent Limits..... 31

- A. - Technology-Based Effluent Limits 31 -
- B. - Water Quality-based Effluent Limits 32 -
- C. - Antidegradation 35 -
- D. - Facility Specific Limits 35 -

Appendix E: Reasonable Potential and Water Quality-Based Effluent Limit Calculations 36

- A. - Reasonable Potential Analysis..... 36 -
- B. - WQBEL Calculations 39 -

Appendix F: IDEQ 401 Certification 43

Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q10	30 day, 10 year low flow
ACR	Acute-to-Chronic Ratio
AML	Average Monthly Limit
ASR	Alternative State Requirement
AWL	Average Weekly Limit
BA	Biological Assessment
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BOD ₅	Biochemical oxygen demand, five-day
BOD _{5u}	Biochemical oxygen demand, ultimate
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EA	Environmental Assessment
EFH	Essential Fish Habitat
The EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
gpd	Gallons per day

HUC	Hydrologic Unit Code
IC -	Inhibition Concentration
ICIS -	Integrated Compliance Information System
IDEQ -	Idaho Department of Environmental Quality
I/I	Infiltration and Inflow
LA -	Load Allocation
lbs/day -	Pounds per day
LC -	Lethal Concentration
LC ₅₀ -	Concentration at which 50% of test organisms die in a specified time period
LD ₅₀ -	Dose at which 50% of test organisms die in a specified time period
LOEC -	Lowest Observed Effect Concentration
LTA -	Long Term Average
LTCP -	Long Term Control Plan
mg/L	Milligrams per liter
ml -	milliliters
ML -	Minimum Level
µg/L -	Micrograms per liter
mgd -	Million gallons per day
MDL -	Maximum Daily Limit or Method Detection Limit
MF -	Membrane Filtration
MPN	Most Probable Number
N -	Nitrogen
The EPA -	National Environmental Policy Act
NOAA -	National Oceanic and Atmospheric Administration
NOEC -	No Observable Effect Concentration
NOI -	Notice of Intent
NPDES -	National Pollutant Discharge Elimination System
NSPS -	New Source Performance Standards
OWW -	Office of Water and Watersheds
O&M -	Operations and maintenance
POTW -	Publicly owned treatment works
PSES -	Pretreatment Standards for Existing Sources

QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SPCC	Spill Prevention and Control and Countermeasure
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU _a	Toxic Units, Acute
TU _c	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
Water Quality Standards	Water Quality Standards
WWTP	Wastewater treatment plant

I. Applicant

A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Plant (Oxbow)
NPDES Permit # ID-0020133

Physical Address: -
101 S. Emerson Ave,
Shelley, Idaho 83274 -

Mailing Address: -
101 S. Emerson Avenue,
Shelley, Idaho 83274 -

Contact: -
Thomas L. Herbert, (208) 356-9201 -

B. Permit History

The most recent NPDES permit for the Oxbow Wastewater Treatment Facility (Oxbow), formerly permitted as the City of Shelly Wastewater Treatment Plant, was issued on June 8, 2004, became effective on August 1, 2004, and expired on July 31, 2009. An NPDES application for permit issuance was submitted by the permittee on March 31, 2008. The EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR 122.6, the permit has been administratively extended and remains fully effective and enforceable.

II. Facility Information

A. Treatment Plant Description

The Eastern Idaho Regional Wastewater Treatment Authority (Authority) owns, operates and has maintenance responsibility for a publicly owned treatment works (POTW) that treats domestic sewage. The facility treats wastewater that is primarily from local residents through a separate sanitary sewer system.

An upgrade to Oxbow (Oxbow), formerly called and permitted under the name of the City of Shelley Wastewater Treatment Plant, was completed and became operational in December 2009. In addition to Shelley, the Authority added the satellite communities of Ammon, North Bingham County and South Bonneville County requiring an increase in capacity (See Appendix A). The City of Ammon requires additional capacity to accommodate growth. South Bonneville County and North Bingham County discharge to Oxbow to eliminate centralized community septic systems and associated nitrate contamination of ground water and to provide capacity for growth. Initial treatment at the facility consists of screening. Flow is then sent to an anoxic basin followed by two aeration basins in series, then to a membrane

bio-reactor treatment system. The waste stream is then treated by ultraviolet disinfection prior to discharge through Outfall 001.

Settled solids are removed from the treatment system and transported to a landfill.

The current service population is estimated to be 21,000 people. The service population before the upgrade was 3,800. The upgraded facility has a design flow rate of 2.0 million gallons per day (mgd) up from the previous design flow of 0.47 mgd. The application estimated average inflow and infiltration for the collection system to be zero gallons per day.

B. Compliance History

A review of the discharge monitoring reports (DMRs) since December 2009, when the new facility was operational to July 2013 found the following violations:

Biochemical Oxygen Demand (BOD₅)

Violations of the average monthly concentration limit of 30 mg/L, with discharges of 48.2 mg/L in December 2009 and 58.5 mg/L in January 2010. Violations of the average weekly concentration limit of 45 mg/L, with discharges of 123 mg/L in December 2009 and 140 mg/L in January 2010. Violation of the average monthly mass limit of 115 lb/day, with a discharge of 171 lb/day in December 2009. Violations of the average weekly mass limit of 172 lb/day, with discharges of 436 lb/day in December 2009, 271 lb/day in January 2010, and 201 lb/day in July 2010.

E. coli

Violations of the instantaneous *E. coli* limit of 406 #/100ml, with discharges of 816 #/100ml in December 2009, 2419 #/100ml in January 2010, and 727 #/100ml in February 2010.

Violations of the monthly geometric average *E. coli* limit of 126 #/100ml, with discharges of 182 #/100ml in December 2009, 1211 #/100ml in January 2010, and 243 #/100ml in February 2010.

Total Suspended Solids (TSS) Removal

A violation of the percent TSS removal requirement of 65%, with an 8% removal in February 2010.

No violations occurred since two months after start-up.

III. Receiving Water

This facility discharges to the Snake River in the City of Shelley, Idaho. Outfall 001 is located at latitude 43.38° N and longitude 112.2° W.

A. Low Flow Conditions

The low flow conditions of a water body are used to assess the need for and develop water quality based effluent limits (see Appendix B of this fact sheet for additional information on flows). The EPA used ambient flow data collected at the Station USGS station 13060000, Snake River near Shelley, Idaho, and the EPA's DFLOW 3.1b model to calculate the low flow conditions for the Snake River at river mile 787.8.

B. Water Quality Standards

Overview

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet water quality standards. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. 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 that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and 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.

Designated Beneficial Uses

This facility discharges to the Snake River in the American Falls Subbasin, (HUC 17040206), Water Body Unit S-22. At the point of discharge, the Snake River is protected for the following designated uses (IDAPA 58.01.02.150.08).

- cold water aquatic life
- primary contact recreation
- domestic water supply
- salmonid spawning

In addition, Water Quality Standards state that all waters of the State of Idaho are protected for industrial and agricultural water supply, wildlife habitats and aesthetics (IDAPA 58.01.02.100.03.b and c, 100.04 and 100.05).

Surface Water Quality Criteria

The criteria are found in the following sections of the Idaho Water Quality Standards:

- The narrative criteria applicable to all surface waters of the State are found at IDAPA 58.01.02.200 (General Surface Water Quality Criteria).
- The numeric criteria for toxic substances for the protection of aquatic life and primary contact recreation are found at IDAPA 58.01.02.210 (Numeric Criteria for Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use).
- Additional numeric criteria necessary for the protection of aquatic life can be found at IDAPA 58.01.02.250 (Surface Water Quality Criteria for Aquatic Life Use Designations).
- Numeric criteria necessary for the protection of recreation uses can be found at IDAPA 58.01.02.251 (Surface Water Quality Criteria for Recreation Use Designations).

- Water quality criteria for agricultural water supply can be found in the EPA's *Water Quality Criteria 1972*, also referred to as the "Blue Book" (EPA R3-73-033) (See IDAPA 58.01.02.252.02)

The numeric and narrative water quality criteria applicable to Snake River at the point of discharge are provided in Appendix B of this fact sheet.

Antidegradation

The IDEQ has completed an antidegradation review which is included in the draft 401 certification for this permit. See Appendix E for the State's draft 401 water quality certification. The EPA has reviewed this antidegradation review and finds that it is consistent with the State's 401 certification requirements and the State's antidegradation implementation procedures. Comments on the 401 certification including the antidegradation review can be submitted to the IDEQ as set forth above (see State Certification).

C. Water Quality Limited Waters

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 CWA requires states to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited segments. A TMDL is a detailed analysis of the water body to determine its assimilative capacity. The assimilative capacity is the loading of a pollutant that a water body can assimilate without causing or contributing to a violation of water quality standards. Once the assimilative capacity of the water body has been determined, the TMDL will allocate that capacity among point and non-point pollutant sources, taking into account natural background levels and a margin of safety. Allocations for non-point sources are known as "load allocations" (LAs). The allocations for point sources, known as "waste load allocations" (WLAs), are implemented through effluent limitations in NPDES permits. Effluent limitations for point sources must be consistent with applicable TMDL allocations.

The State of Idaho's 2010 Integrated Report Section 5 (section 303(d)) lists the Snake River in the area of Oxbow's discharge because it did not attain the state water quality standards for mercury. The American Falls Reservoir downstream of Oxbow's discharges is listed on Idaho's 303(d) list as impaired for sediment, phosphorus, and dissolved oxygen. Although the wastewater treatment plant at Shelley is contributing nutrients and sediment to the Snake River (Appendix C), it appears they are having minimal effect on water quality or beneficial uses as assessed at four bridge sites.

The TMDL states "Should Blackfoot, Firth, or Shelley see increases in population to these levels, or other increased demands on the WWTP, consideration will be made to revise the TMDL to account for the required new capacity." However, the TMDL has not been revised to account for the new capacity of Oxbow. The TMDL stated nutrients do not appear to be impairing beneficial uses in the Snake River, but as the river discharges to American Falls Reservoir, a load allocation was established for phosphorus.

In August, 2012, the EPA approved the IDEQ's *American Falls Subbasin Total Maximum Daily Load (TMDL) Plan: Subbasin Assessment and Loading Analysis May, 2012 (TMDL)*.

The TMDL included wasteload allocations for total phosphorus and TSS for Shelley (i.e., Oxbow).

The WLAs for Shelley (i.e., Oxbow) provided in the TMDL are 1.26 tons/year for phosphorus and 21.0 tons/year for TSS.

IV. Effluent Limitations

A. Basis for Effluent Limitations

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based 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 applicable to a waterbody are being met and may be more stringent than technology-based effluent limits. The basis for the effluent limits proposed in the draft permit is provided in Appendix C.

Table 1: Effluent Limitations and Monitoring Requirements from the Existing Permit - Outfall 001						
Parameter	Units	Monthly Avg.	Weekly Avg.	Instantaneous Maximum Limit	Sample Frequency	Sample Type
Flow	MGD	---	---	---	Continuous	Recording
Biochemical Oxygen Demand (BOD ₅)	mg/l	30	45	---	monthly	8-Hour Composite
	lbs/day	115 ¹	172 ¹	---		
Total Suspended Solids (TSS) ²	mg/l	45	65	---	monthly	8-Hour Composite
	lbs/day	172 ¹	249 ¹	---		
E. coli Bacteria ²	colonies/100 ml	126	---	406	5/month	Grab
pH	su.	6.5 – 9.0			weekly	Grab
Dissolved Oxygen ³	mg/l	---	---	---	weekly	Grab
Total Phosphorus as P ³	mg/l	---	---	---	weekly	8-hour composite
Total Ammonia as N ³	mg/l	---	---	---	monthly	8-hour composite
¹ Loading limits are calculated by multiplying the concentration in mg/L by the design flow of 2.0 mgd and a conversion factor of 8.34 lbs/gallon. ² The average monthly E. coli counts must not exceed a geometric mean of 126/100 ml based on a minimum of five samples taken every three to five days over a thirty day period. ³ Monitoring shall be conducted once per month starting in January 2006 and lasting for one year.						

Under the previous permit, percent removal for each of BOD₅ and TSS was required to be no less than 65%.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limits that are in the draft permit.

Eastern Idaho Regional Wastewater Treatment Facility

1. - The permittee must not discharge floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
2. - Removal Requirements for BOD₅ and TSS: Removal Rates for BOD₅ and TSS must be at a minimum 85%. Percent removal of BOD₅ and TSS must be reported on the DMRs. For each parameter, the monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month. Influent and effluent samples must be taken over approximately the same time period.
3. - pH: pH must be within the range of 6.5 – 9.0 standard units.

Table 2 below presents the proposed effluent limits for BOD₅, TSS, *E. coli* and total phosphorus.

Table 2: Proposed Effluent Limits				
Parameter	Units	Effluent Limits		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
Five-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45	---
	lb/day	500 ²	751 ²	---
BOD ₅ Removal	percent	85 minimum ¹	---	---
TSS	mg/L	30	45	---
	lb/day	179	377	---
	Annual Average Limit 115			
TSS Removal	percent	85 minimum ¹	---	---
<i>E. coli</i>	#/100 ml	126 (geometric mean) ³	---	406 ⁴
Total Phosphorus (Interim)	lb/day	52 ⁵	78 ⁵	---
Total Phosphorus as P	lb/day	10.7 ⁶	20.4 ⁶	---
		Annual Average Limit 6.90 ⁶		

1. -Percent removal is calculated using the following equation: ((influent - effluent) / influent) x 100, this limit applies to the average monthly values.
2. -Loading limits were calculated by multiplying the concentration in mg/L by the design flow of 2.0 mgd and a conversion factor of 8.34 lbs/gallon.
3. -The monthly average for *E. coli* is the geometric mean based on at least five samples taken every three to seven days during the month.
4. -This is an instantaneous limit, applicable to each grab sample without averaging.
5. -Interim limits lasting seven and one half years under Compliance Schedule Option 1 – Cessation of Discharge; or lasting four years and eleven months under Compliance Schedule Option 2 – Treatment and Continuing to Discharge.
6. Limit to be achieved seven and one half years with cessation or partial cessation of discharge and reuse option and four years and eleven months from the effective date of the permit with end of pipe treatment option.

C. Compliance Schedule

The Idaho Water Quality Standards at IDAPA 58.01.02.400.03 allow compliance schedules that allow a discharger to phase in, over time, compliance with water quality based effluent limitations when limitations are in the permit for the first time. Oxbow's water quality based effluent limits for total phosphorus are required for the first time.

The federal regulation at 40 CFR 122.47 requires that compliance schedules require compliance with effluent limitations as soon as possible and that, when the compliance schedule is longer than one year, the schedule shall set forth interim requirements and the dates for their achievement. The time between the interim dates shall generally not exceed one year and when the time necessary to complete any interim requirement is more than one year, the schedule shall require reports on progress toward completion of these interim requirements.

In order to grant a compliance schedule the permitting authority must make a reasonable finding that the discharger cannot immediately comply with the water quality based effluent limit upon the effective date of the permit and that a compliance schedule is appropriate (see 40 CFR 122.47 (a)). The draft permit proposes an average monthly effluent limit of 10.9 lbs/day, a weekly limit of 20.6 lbs/day and an annual average limit of 6.90 lbs/day. The EPA has found that the permittee needs a compliance schedule for total phosphorus. As stated above in the Water Quality Limited Waters section a WLA has not been provided to Oxbow which takes into account the increase in capacity, service population and design flow. Also, the Oxbow facility was not upgraded for phosphorus control. In order to achieve the phosphorus effluent limitations Oxbow must make physical modifications to its facility. Thus, Oxbow is unable to achieve the new total phosphorus effluent limitation and a compliance schedule is appropriate.

In a letter from Eric Christensen, Chairman of the Eastern Idaho Regional Wastewater Authority, received on August 6, 2012, Oxbow requested that EPA delay issuance of the NPDES permit to allow Oxbow time to evaluate, among other treatment options, wastewater reuse and the implications and costs associated with fully or partially removing Oxbow treated effluent from the Snake River. Partial removal would require Oxbow to locate a reuse (land application) location or alternatively a rapid infiltration location for part of the Oxbow discharge. The part of the discharge not eliminated would be required to meet the total phosphorus loading limits before being discharges to the Snake River.

Partial removal of Oxbow discharges will not only reduce phosphorus loadings to the Snake River but would also reduce the loadings of the other pollutants in Oxbow's discharge such as TSS, BOD₅, bacteria and ammonia. Full or partial removal of discharges from waters of the U.S. is the goal of the CWA and the National Pollutant Discharge Elimination System permits.

In response to Oxbow's letter, EPA is proposing a compliance schedule that allows for a final decision on wastewater reuse, partial reuse or rapid infiltration by January 1, 2016 pursuant to 40CFR 122.47(b)(3) and (4):

“(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

- (i) - Both schedules contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;
- (ii) - One schedule lead to timely compliance with applicable requirements, no later than the statutory deadline;
- (iii) - The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements no later than the statutory deadline;
- (iv) - Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under paragraph (b)(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.”

(4) The applicant’s or permittee’s decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.”

The permit meets the requirements of 40CFR122.47(b)(3) and (4) with the following compliance schedules:

(3) Oxbow’s letter and follow-up conversations with Forsgren Associates stated Oxbow is undecided whether to follow the cessation of discharge option (Option 1) or treat and continue to discharge to the Snake River option (Option 2).

- (i) -The permit establishes two compliance schedules with an identical interim deadline requiring a final decision on whether to cease conducting regulated activities by January 1, 2016. The regulated activity is discharge to the Snake River. The deadline to decide to treat and continue to discharge is identical, January 1, 2016.
- (ii) The permit refers to a timely compliance schedule for the non-cessation option which is treatment for phosphorus. The compliance schedule implements a WLA from the TMDL. The four year eleven month deadline in Condition I.C.1. is a common period for installation of treatment systems under NPDES permits and is therefore timely.
- (iii)The permit establishes a second schedule for cessation of the discharge to the Snake River by May 1, 2021 (seven and one half years) in Condition I.C.2. This option also includes cessation of discharge of a portion of the discharge and meeting the loading limit with the remaining flow discharged to the Snake River. This option ensures timely compliance with applicable CWA requirements. This is based on the following:
 - a. - Due to the time required to locate suitable property, negotiate and complete a purchase, and complete an environmental impact study for the new site, Oxbow would not be able to consider the reuse option with a four year eleven month compliance schedule.
 - b. - Consultation with IDEQ’s Pocatello Regional Office,

- c. IDEQ authorizing the compliance schedule pursuant to IDAPA 58.01.02.400.03. IDEQ's draft 401 Certification shown in Appendix E states "The compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limitations as specified in the permit, while at the same time, it ensures compliance with the final effluent limitations is accomplished as soon as possible."
- d. - Estimates from Oxbow's Project Manager with Forsgren Associates,
- e. - The seven and one half year compliance schedule for a similar reuse option established by the EPA in the City Weiser NPDES permit No. ID-002029-0. The 401 Certification for that permit also stated the compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limitations as specified in the permit, while at the same time, ensuring compliance with the final effluent limitations is accomplished as soon as possible. Further Mark Mason, the IDEQ Boise Regional Office reuse expert confirmed the similar Weiser compliance schedule ensured timely compliance.

(iv) If the decision is to cease the discharge to the Snake River with the land application option, the City must follow the schedule leading to cessation or partial cessation of discharge in Condition I.C.3.b. If the option is to continue with the discharge, Oxbow must follow the compliance schedule in Condition I.C.3.c.

(4) Each compliance schedule states, "The permittee must provide the EPA with written notice by a ranking elected official of the permittee's final selection of either Option 1 (cessation of discharge) or Option 2 (treatment and continuation of discharge)."

Pursuant to 40 CFR 122.47(a)(3), a permit with a compliance schedule must have interim requirements and dates for achievement. The EPA has included interim requirements and dates for their achievement. An interim effluent limitation is established to insure no increase in phosphorus loading to the Snake River during the compliance schedule.

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) requires 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 permit also requires the permittee to perform effluent monitoring required by the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permit also requires the permittee to perform effluent monitoring required by parts B.6 and D of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to the 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 must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Table 3, below, presents the proposed effluent monitoring requirements for Oxbow. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Additional monitoring is required because Oxbow is now a major facility. Major facilities are those with a design capacity of 1.0 mgd or greater. Oxbow design capacity is 2.0 mgd up from 0.47 mgd. Major facilities are required to monitor for WET and for Form 2A Part D Expanded Effluent Testing. In addition 24 hour composite sampling is required consistent with other major facilities instead of only 8 hour composite sampling for TSS, BOD₅ and total ammonia. Composite 24 hour sampling for total phosphorus is required to insure compliance with the new total phosphorus limit. See Table 1.

Parameter	Units	Sample Location	Sample Frequency	Sample Type
Flow	Mgd	Effluent	Continuous	recording
BOD ₅	mg/L	Influent & Effluent	1//week	24-hour composite
	lb/day	Influent & Effluent	1//week	calculation ¹
	% Removal	--	--	calculation ²
TSS	mg/L	Influent & Effluent	1//week	24-hour composite
	lb/day	Influent & Effluent	1//week	calculation ¹
	% Removal	--	--	calculation ²
pH	standard units	Effluent	5/week	grab
E. Coli	#/100 ml	Effluent	4/week	grab
Total Ammonia as N	mg/L	Effluent	1/month	24-hour composite
	lb/day	Effluent		calculation ¹
Total Phosphorus	lb/day	Effluent	1/week	24-hour composite
NPDES Application Form 2A Part 2B.6., Form 2A Part D Expanded Effluent Testing and Form 2A Part E Whole Effluent Toxicity Testing	---	Effluent	1 each in 2 nd , 3 rd , & 4 th years of the permit	---

Table 3: Effluent Monitoring Requirements				
Parameter	Units	Sample Location	Sample Frequency	Sample Type
Notes:				
1. Loading is calculated by multiplying the concentration in mg/L by the flow in mgd and a conversion factor of 8.34.				
2. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month, i.e.: (average monthly influent – average monthly effluent) ÷ average monthly influent.				
3. Influent and effluent samples must be taken over approximately the same time period.				

C. Monitoring and Reporting

During the period from the effective date of the permit to six months from the effective date of the permit, the permittee must either submit monitoring data and other reports in paper form, or must report electronically using NetDMR, a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection. Within six months of the effective date of the permit, the permittee must submit monitoring data and other reports electronically using NetDMR.

Specific requirements regarding submittal of data and reports in paper form and submittal using NetDMR are described below.

Paper Copy Submissions.

Monitoring data must be submitted using the DMR form (EPA No. 3320-1) or equivalent and must be postmarked by the 20th day of the month following the completed reporting period. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of this permit (“Signatory Requirements”). The permittee must submit the legible originals of these documents to the Director, Office of Compliance and Enforcement, with copies to IDEQ at the following addresses:

US EPA Region 10
Attn: ICIS Data Entry Team
1200 Sixth Avenue, Suite 900
OCE-133
Seattle, Washington 98101-3140

Idaho Department of Environmental Quality
DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

Electronic Copy Submissions

Monitoring data must be submitted electronically to EPA no later than the 20th of the month following the completed reporting period. All reports required under this permit must be submitted to EPA as a legible electronic attachment to the DMR. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of the draft permit (“Signatory Requirements”). Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit paper copies of DMRs or other reports to EPA and IDEQ.

The permittee may use NetDMR after requesting and receiving permission from US EPA Region 10. NetDMR is accessed from <http://www.epa.gov/netdmr>.

VI. Sludge (Biosolids) Requirements

The EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The 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 facilities 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. Oxbow is required to update the Quality Assurance Plan for the wastewater treatment plant within 90 days of the effective date of the final permit. The Quality Assurance Plan must include standard operating procedures the permittee will follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and be made available to the EPA and the IDEQ upon request.

B. Operation and Maintenance Plan

The permit requires the Oxbow 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. The 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 must be retained on site and made available to the EPA and the IDEQ upon request.

C. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection System

Untreated or partially treated discharges from separate sanitary sewer systems are referred to as sanitary sewer overflows (SSOs). SSOs may present serious risks of human exposure when released to certain areas, such as streets, private property, basements, and receiving waters used for drinking water, fishing and shellfishing, or contact recreation. Untreated sewage contains pathogens and other pollutants, which are toxic. SSOs are not authorized under this permit. Pursuant to the NPDES regulations, discharges from separate sanitary sewer systems authorized by NPDES permits must meet effluent limitations that are based upon secondary treatment. Further, discharges must meet any more stringent effluent limitations that are established to meet the EPA-approved state water quality standards.

The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system. The following specific permit conditions apply:

Immediate Reporting – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

Written Reports – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

Record Keeping – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

Proper Operation and Maintenance – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

D. Standard Permit Provisions

Sections **III, IV and V** of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because these requirements are based directly on NPDES regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and - 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 National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or

endangered species. In an e-mail dated January 21, 2009, NOAA Fisheries stated that there are no threatened or endangered species under NOAA's jurisdiction in the Snake River drainage upstream of the Hells Canyon Dam, which is located at river mile 247.5. The Oxbow WWTP is located more than 400 miles upstream from the nearest ESA-listed threatened or endangered species under NOAA's jurisdiction. No USFWS species are in Bingham County, the location of the Oxbow WWTP discharge according to the *U.S. Fish and Wildlife Service - Idaho Fish and Wildlife Office Endangered, Threatened, Proposed, and Candidate Species, With Associated Proposed and Critical Habitats in Idaho* April 18, 2013.

A review of the threatened and endangered species located in Idaho finds that the reissuance of this permit will have no effect on any listed threatened or endangered species under NOAA's jurisdiction.

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 the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the Essential Fish Habitat documents shows Bingham County does not contain essential fish habitat.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Due to the same reasons listed in VIII.A. EPA concludes that issuance of this permit has no affect on EFH.

C. State Certification

Section 401 of the CWA requires the 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, or treatment standards established pursuant to any State law or regulation.

D. Permit Expiration

The permit will expire five years from the effective date.

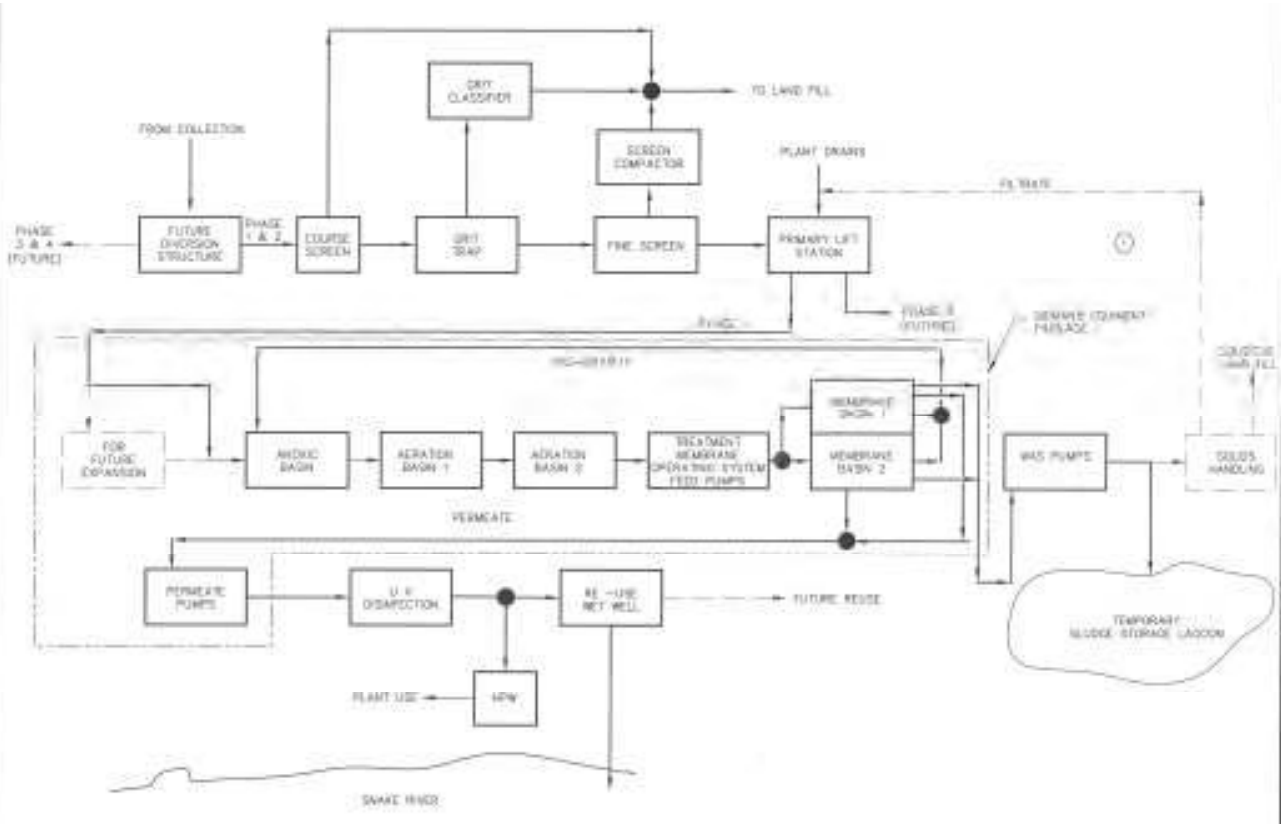
IX. References

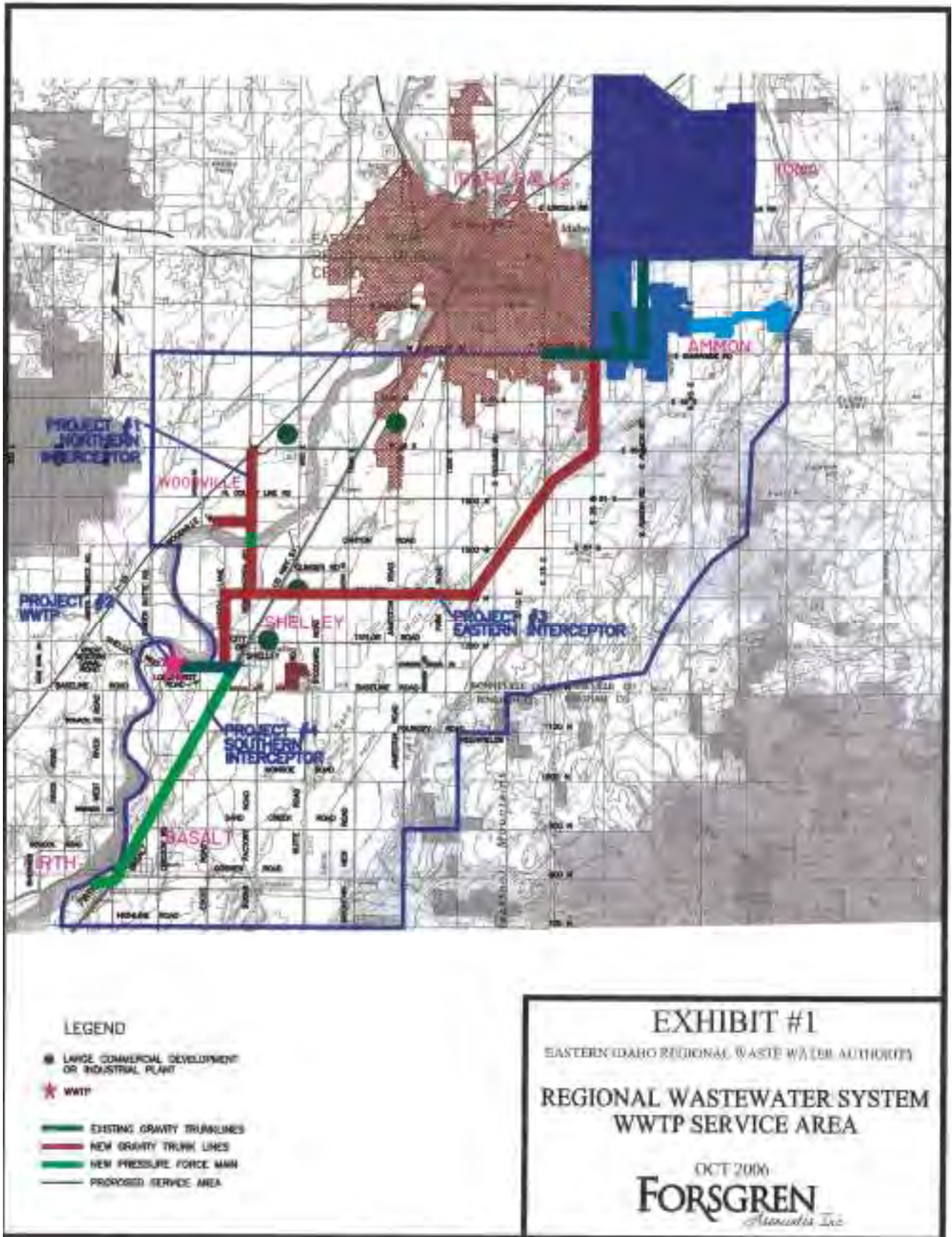
EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.

Water Pollution Control Federation. Subcommittee on Chlorination of Wastewater. *Chlorination of Wastewater*. Water Pollution Control Federation. Washington, D.C. 1976.

EPA. 2010. *NPDES Permit Writers' Manual*. Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

Appendix A: Facility Information





Appendix B: Water Quality Criteria Summary

This appendix provides a summary of water quality criteria applicable to the Snake River.

Idaho water quality standards include criteria necessary to protect designated beneficial uses. The standards are divided into three sections: General Water Quality Criteria, Surface Water Quality Criteria for Use Classifications, and Site-Specific Surface Water Quality Criteria. The EPA has determined that the criteria listed below are applicable to the Snake River. This determination was based on (1) the applicable beneficial uses of the river (i.e., cold water aquatic life, primary contact recreation, salmonid spawning, agricultural water supply, industrial water supply, wildlife habitats, and aesthetics), (2) the type of facility, (3) a review of the application materials submitted by the permittee, and (4) the quality of the water in the Snake River.

A. General Criteria (IDAPA 58.01.02.200)

Surface waters of the state shall be free from:

- hazardous materials,
- toxic substances in concentrations that impair designated beneficial uses,
- deleterious materials,
- radioactive materials,
- floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses,
- excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses,
- oxygen demanding materials in concentrations that would result in an anaerobic water condition

Surface water level shall not exceed allowable level for:

- radioactive materials, or
- sediments

B. Numeric Criteria for Toxics (IDAPA 58.01.02.210)

This section of the Idaho Water Quality Standards provides the numeric criteria for toxic substances for waters designated for aquatic life, recreation, or domestic water supply use. Monitoring of the effluent has shown that the following toxic pollutant has been present at detectable levels in the effluent: **Ammonia**

C. Surface Water Criteria To Protect Aquatic Life Uses (IDAPA 58.01.02.250)

1. pH: Within the range of 6.5 to 9.0
2. Dissolved Oxygen: Exceed 6 mg/L at all times.
3. Ammonia:

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. The table below details the equations used to determine water quality criteria for ammonia.

The pH and temperature data are in the Snake River upstream of the facility. These data were used to determine the appropriate pH and temperature values to calculate the ammonia criteria.

As with any natural water body the pH and temperature of the water will vary over time. Therefore, to protect water quality criteria it is important to develop the criteria based on pH and temperature values that will be protective of aquatic life at all times. The EPA used the 95% percentile of the pH and temperature data for the calculations.

Table B-1: Water Quality Criteria for Ammonia		
	Acute Criterion	Chronic Criterion
Equations:	$\frac{0.275}{1+10^{7.204-pH}} + \frac{39}{1+10^{pH-7.204}}$	$\left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times \text{MIN}(2.85, 1.45 \times 10^{0.028 \times (25-T)})$
Results:	1.77 mg/L	0.716 mg/L.

95 th Percentile Ambient pH	8.6
95 th Percentile Ambient Temperature °C	18.4
Highest Background Ammonia mg/L	0.06
Highest Discharge Ammonia mg/L	6.4
Coefficient of Variation	1.397

The coefficient of variation (CV) of the data and the highest observed effluent value are based on effluent data collected by the City of Shelley from May, 2006 through December, 2006. This is the most recent and only data available for ammonia. The 95th percentile pH (for the entire year) is 8.6 standard units and the 95th percentile temperature is 18.4 °C are observed in the Snake River upstream from the discharge,

The reasonable potential analysis shows that there is no reasonable potential for the facility’s discharge to cause or contribute to an exceedance of the acute or chronic criterion, therefore, effluent limits for ammonia are not required. Ammonia is a parameter commonly monitored for POTWs to determine performance. Monitoring will again be required. Ammonia monitoring will also be used to calculate the reasonable potential for the next reissuance of the permit.

D. Surface Water Quality Criteria For Recreational Use Designation (IDAPA 58.01.02.251)

a. Geometric Mean Criterion. Waters designated for primary or secondary contact recreation are not to contain *E. coli* in concentrations exceeding a geometric mean of 126 *E. coli* organisms per 100 ml based on a minimum of 5 samples taken every 3 to 7 days over a 30 day period.

b. Use of Single Sample Values: This section states that that a water sample that exceeds certain “single sample maximum” values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the “single sample maximum” value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.). for primary and contact recreation.

Appendix C: Low Flow Conditions and Dilution

A. Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Idaho's water quality standards require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10 or 1B3
Chronic aquatic life	7Q10 or 4B3
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Ammonia	30B3 or 30Q10
<ol style="list-style-type: none"> 1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years. 2. The 1B3 is biologically based and indicates an allowable exceedance of once every 3 years. 3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years. 4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years. 5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years. 6. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years. 7. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows. 	

Idaho's water quality standards do not specify a low flow to use for acute and chronic ammonia criteria, however, the EPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia; Notice* (64 FR 719769 December 22, 1999) identifies the appropriate flows to be used.

The EPA determined critical low flows upstream of the discharge from the following USGS Station: USGS station 13060000, Snake River near Shelley, Idaho

The estimated low flows for the station are presented in Table C-1.

Flows	cfs
1Q10	1190
7Q10	1400
30B3	1790

B. Mixing Zones and Dilution

In some cases a dilution allowance or mixing zone is permitted. A mixing zone is an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where the water quality standards may be exceeded as long as acutely toxic conditions are prevented (the EPA, 1994).

The federal regulations at 40 CFR 131.13 states that “States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances.”

The Idaho Water Quality Standards at IDAPA 58.01.02.060 provides Idaho’s mixing zone policy for point source discharges. The policy allows the IDEQ to authorize a mixing zone for a point source discharge after a biological, chemical, and physical appraisal of the receiving water and the proposed discharge. The IDEQ considers the following principles in limiting the size of a mixing zone in flowing receiving waters (IDAPA 58.01.02.060.01.e):

- i. The cumulative width of adjacent mixing zones when measured across the receiving water is not to exceed 50% of the total width of the receiving water at that point;
- ii. The width of a mixing zone is not to exceed 25% of the stream width or 300 meters plus the horizontal length of the diffuser as measured perpendicularly to the stream flow, whichever is less;
- iii. The mixing zone is to be no closer to the 10 year, 7 day low-flow shoreline than 15% of the stream width;
- iv. The mixing zone is not to include more than 25% of the volume of the stream flow.

In the State 401 Certification, the IDEQ proposes to authorize a mixing zone of 25% of the stream flow volume for ammonia and chlorine.

The following formula is used to calculate a dilution factor based on the allowed mixing zone.

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e}$$

Where:

- D = Dilution Factor -
- Q_e = Effluent flow rate (set equal to the design flow of the WWTP) -
- Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10, 30B3, etc)
- %MZ = Percent Mixing Zone

The EPA calculated dilution factors for year round critical low flow conditions. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 2.0 mgd. The dilution factors are listed in Table C-2.

Table C-2: Dilution Factors	
Flows	Dilution Factors
1Q10	97
7Q10	114
30B3	146

Appendix D: Basis for Effluent Limits

The following discussion explains the derivation of technology and water quality based effluent limits proposed in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general, Part C discusses anti-backsliding provisions, Part D discusses the effluent limits imposed due to the State's anti-degradation policy, and Part E presents a summary of the facility specific limits.

A. Technology-Based Effluent Limits

Federal Secondary Treatment Effluent Limits

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," which all POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD₅, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table C-1.

Parameter	30-day average	7-day average
BOD ₅	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD ₅ and TSS (concentration)	85% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass based limits are expressed in pounds per day and are calculated as follows:

$$\text{Mass based limit (lb/day)} = \text{concentration limit (mg/L)} \times \text{design flow (mgd)} \times 8.34^1$$

Since the design flow for this facility is 2.0 mgd, the technology based mass limits for BOD₅ and TSS are calculated as follows:

$$\text{Average Monthly Limit} = 30 \text{ mg/L} \times 2.0 \text{ mgd} \times 8.34 = 500 \text{ lbs/day}$$

$$\text{Average Weekly Limit} = 45 \text{ mg/L} \times 2.0 \text{ mgd} \times 8.34 = 751 \text{ lbs/day}$$

¹ 8.34 is a conversion factor with units (lb × L)/(mg × gallon × 10⁶)

B. Water Quality-based Effluent Limits***Statutory and Regulatory Basis***

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an NPDES permit that does not ensure compliance with the water quality standards of all affected States.

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 or Tribal water quality standard, including narrative criteria for water quality, and that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable water quality standards.

The regulations require the permitting authority to make this evaluation 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.

Reasonable Potential Analysis

When evaluating the effluent to determine if the pollutant parameters in the effluent 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 criterion, the EPA projects the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern. The EPA uses the concentration of the pollutant in the effluent and receiving water and, if appropriate, the dilution available from the receiving water, to project the receiving water concentration. If the projected concentration of the pollutant in the receiving water exceeds the numeric criterion for that specific pollutant, then the discharge has the reasonable potential to cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

Sometimes it may be appropriate to allow a small area of the 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 will decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the concentration of the pollutant in the receiving water is less than the criterion necessary to protect the designated uses of the water body. Mixing zones must be authorized by the State.

The reasonable potential analysis for total ammonia nitrogen were based on a mixing zone of 25% based on the IDEQ's draft certification. If IDEQ revises the allowable mixing zone in its final certification of this permit, reasonable potential analysis will be revised accordingly.

Procedure for Deriving Water Quality-based Effluent Limits

The first step in developing a water quality-based effluent 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:

1. 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 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.

To ensure that these waters will come into compliance with water quality standards Section 303(d) of the CWA requires States to develop TMDLs for those water bodies that will not meet water quality standards even after the imposition of technology-based effluent limitations. The first step in establishing a TMDL is to determine the assimilative capacity (the loading of pollutant that a water body can assimilate without exceeding water quality standards). The next step is to divide the assimilative capacity into allocations for non-point sources (load allocations), point sources (wasteload allocations), natural background loadings, and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the wasteload allocation for the point source.

The American Falls Subbasin Total Maximum Daily Load (TMDL) Plan: Subbasin Assessment and Loading Analysis May, 2012 provided a total phosphorus allocation of 1.26 tons per year and a TSS allocation of 21 tons per year.

2. Mixing zone based WLA

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.

3. Criterion as the Wasteload Allocation

In some cases a mixing zone cannot be authorized, either because the receiving water is already at, or exceeds, the criterion, the receiving water flow is too low to provide dilution, or the facility can achieve the effluent limit without a mixing zone. In such cases, the criterion becomes the wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the effluent discharge 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.

Summary - Water Quality-based Effluent Limits

The water quality based effluent limits in the draft permit are summarized below.

pH

The Idaho water quality standards at IDAPA 58.01.02.250.01.a, require pH values of the river to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. Effluent pH data were collected daily at the facility from December, 2009 to May 2011, a total of 34 samples were collected. The data ranged from 6.9 – 7.9 standard units. The pH range of the effluent is well within the State’s water quality criterion of 6.5 – 9.0 standard units, therefore no mixing zone is necessary for this discharge.

E. coli

The Idaho water quality standards state that waters of the State of Idaho, that are designated for recreation, are not to contain *E. coli* bacteria in concentrations exceeding 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a thirty day period. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The Idaho water quality standards also state that a water sample that exceeds certain “single sample maximum” values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the “single sample maximum” value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.).

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent. Because a single sample value exceeding 406 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, the EPA has imposed an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 406 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for *E. coli*. This will ensure that the discharge will have a low probability of exceeding water quality standards for *E. coli*.

Regulations at 40 CFR 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms “average monthly limit” and “average weekly limit” are defined in 40 CFR 122.2 as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. In order to ensure that the effluent limits are “derived from and comply with” the geometric mean water quality criterion, as required by 40 CFR 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean and an instantaneous maximum limit.

Residues -

The Idaho water quality standards require that surface waters of the State be free from floating, suspended or submerged matter of any kind in concentrations impairing designated beneficial - uses. The draft permit contains a narrative limitation prohibiting the discharge of such materials. -

Phosphorus

From TMDL, refer to Appendix E.

TSS

From TMDL, refer to Appendix E.

C. Antidegradation

The proposed issuance of an NPDES permit triggers the need to ensure that the conditions in the permit ensure that Tier I, II, and III of the State's antidegradation policy are met. An anti-degradation analysis was conducted by the IDEQ. See Appendix E for the antidegradation analysis.

D. Facility Specific Limits

Table C-2 summarizes the numeric effluent limits that are in the proposed permit. The final limits are the more stringent of technology treatment requirements, water quality based limits or limits retained as the result of anti-backsliding analysis or to meet the State's anti-degradation policy.

Table C-2: Proposed Effluent Limits					
Parameter	Units	Effluent Limits			Basis for Effluent Limits
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	
Five-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45	---	Technology
	lb/day	500	751	---	
BOD ₅ Removal	percent	85 minimum	---	---	
TSS	mg/L	30	45	---	Technology
	lb/day	179	377	---	Water Quality
		Annual Average Limit 115			---
TSS Removal	percent	85 minimum	---	---	Technology
Total Phosphorus ¹	Lbs/day	10.7	20.4	---	Water Quality
		Annual Average Limit 6.90			
<i>E. coli</i>	#/100 ml	126 (geometric mean)	---	406	Water Quality

1. Within four years and 11 months of the effective date for the continue to discharge and treatment option or by June 1, 2021 for the reuse option.

Appendix E: Reasonable Potential and Water Quality-Based Effluent Limit Calculations

Part A of this appendix explains the process the EPA has used to determine if the discharge authorized in the draft permit has the reasonable potential to cause or contribute to a violation of Idaho's federally approved water quality standards. Part B demonstrates how the water quality-based effluent limits (WQBELs) in the draft permit were calculated.

A. Reasonable Potential Analysis

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit. This following section discusses how the maximum projected receiving water concentration is determined

Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d Q_d = C_e Q_e + C_u Q_u \quad \text{Equation 1}$$

where,

- C_d = Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
- C_e = Maximum projected effluent concentration
- C_u = 95th percentile measured receiving water upstream concentration
- Q_d = Receiving water flow rate downstream of the effluent discharge = $Q_e + Q_u$
- Q_e = Effluent flow rate (set equal to the design flow of the WWTP)
- Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

When the mass balance equation is solved for C_d , it becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times Q_u}{Q_e + Q_u} \quad \text{Equation 2}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with 100% of the receiving stream.

If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times (Q_u \times \%MZ)}{Q_e + (Q_u \times \%MZ)} \quad \text{Equation 3}$$

Where:

% MZ = the percentage of the receiving water flow available for mixing.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \quad \text{Equation 4}$$

A dilution factor (D) can be introduced to describe the allowable mixing. Where the dilution factor is expressed as:

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e} \quad \text{Equation 5}$$

The calculation of the dilution factor for Oxbow is shown below.

Q_e = maximum effluent flow = 2.0 mgd

Q_u = 1Q10 = upstream acute critical low flow = 1190 CFS = 769 mgd

Acute dilution ratio = $\frac{2.0 + 769(0.25)}{2.0} = 97$

Q_u = 7Q10 = upstream chronic critical low flow = 1400 CFS = 904 mgd

Chronic dilution ratio = $\frac{2.0 + 904(0.25)}{2.0} = 114$

Q_u = 30B3 = ammonia upstream chronic critical low flow = 1790 CFS = 1156 mgd

Ammonia Chronic dilution ratio = $\frac{2.0 + 1156(0.25)}{2.0} = 146$

Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Controls (TSD, 1991) recommends using the maximum projected effluent concentration (C_e) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (C_e) the EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by

a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (C_e) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n} \quad \text{Equation 6}$$

where,

p_n = the percentile represented by the highest reported concentration

n = the number of samples

confidence level = 99% = 0.99

and

$$\text{RPM} = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}} \quad \text{Equation 7}$$

Where,

σ^2 = $\ln(\text{CV}^2 + 1)$

Z_{99} = 2.326 (z-score for the 99th percentile)

Z_{P_n} = z-score for the P_n percentile (inverse of the normal cumulative distribution function at a given percentile)

CV = coefficient of variation (standard deviation \div mean)

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (\text{RPM})(\text{MRC}) \quad \text{Equation 8}$$

where MRC = Maximum Reported Concentration

Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

Results of Reasonable Potential Calculations

It was determined that ammonia does not have a reasonable potential to cause or contribute to an exceedance of water quality criteria at the edge of the mixing zone. The results of the calculations are presented in Table D-2 of this appendix.

B. WQBEL Calculations

The following TP and TSS allocations are from the American Falls TMDL, Executive Summary Table ES-2a on page xx and Table 5-9 on page 102(excerpts):

Table ES-2a. Load and wasteload allocations for phosphorus (TP targets of 0.05 mg/L) and sediment for American Falls Subbasin water bodies & point sources

Point Source	Total phosphorus (tons/year)		Suspended sediment (tons/year)	
	Annual wasteload		Annual wasteload	
	Allocation	Reduction	Allocation	Reduction
Shelley WWTP	1.26	0.00	21.0	0.00

Table 5-9. Wasteload analyses for point source (wastewater treatment plants and fish hatcheries) dischargers in American Falls Subbasin.

Point Source	Average Flow (mgd)	Total Phosphorus	Wasteload Reduction (tons/year)	Suspended Sediment (tons/year)	Wasteload Reduction (tons/year)
		Waste Load Allocation (tons/year)		Waste Load Allocation (tons/year)	
Shelley WWTP	0.47	1.26	0.00	21.0	0.00

Derive the average weekly and average monthly effluent limits

TSS

Calculating the Average Monthly Limit

21.0 tons/yr x 2000 lb/ton ÷ 365 days/yr = 115 lb/day (annual average) -

Assume LTA = 115 lb/day -

$$AML = LTA \times \exp[z\sigma_n - 0.5\sigma_n^2] \quad \text{(from Table 5-2 of the TSD) -}$$

Where: -

CV = coefficient of variation = 0.60 (based on 65 samples reported as monitoring data taken - before December 2009) -

n = 4 (number of samples in a month) -

$$\sigma_4^2 = \ln((CV^2/n)+1) = \ln((0.6^2/4) + 1) = 0.0863 -$$

$$\sigma_4 = 0.294 -$$

z = percentile exceedance probability for AML (95%) = 1.645 -

$$AML = 115 \times \exp[(1.645 \times 0.294) - (0.5 \times 0.0863)] = 179 \text{ lb/day}$$

Calculating the Average Weekly Limit

The AWL is calculated from the following relationship with the AML (from Table 5-3 of the TSD):

$$AWL = \frac{\exp[z_m\sigma - 0.5\sigma^2]}{\exp[z_a\sigma - 0.5\sigma^2]} \times AML$$

Where CV = 0.634, based on 65 weekly data samples

$$\sigma^2 = \ln(CV^2 + 1) = \ln(0.634^2 + 1) = 0.338$$

$$\sigma = 0.582$$

$$z_m = \text{percentile exceedance probability for AWL (99\%)} = 2.326$$

$$z_a = \text{percentile exceedance probability for AML (95\%)} = 1.645$$

$$AWL = \frac{\exp[(2.326 \times 0.582) - (0.5 \times 0.338)]}{\exp[(1.645 \times 0.294) - (0.5 \times 0.0863)]} \times 179 \text{ lb/day}$$

$$AWL = 377 \text{ lb/day}$$

These water quality based loading limits are compared with the technology based loading limits for TSS in Table D-1 Below.

Table D-1		
Comparison of Technology-based and Water Quality-based Limits for TSS		
Parameter	Average Monthly Limit	Average Weekly Limit
Technology-based	500 lb/day	751 lb/day
Water Quality-based	179 lb/day	377 lb/day
Most Stringent	179 lb/day	377 lb/day

The most stringent limits above are selected and applied in the draft permit as the final effluent limits. The technology-based concentration standards are also applied; the facility must meet both. If it is discharging at flows that approach the design flow rate of 2.0 mgd, the mass-based average monthly loading limit will be more stringent and limiting.

Total Phosphorus

The TMDL established a wasteload allocation for Total Phosphorus of 1.26 tons per year.

Calculating the Average Monthly Limit

$$1.26 \text{ tons/yr} \times 2000 \text{ lb/ton} \div 365 \text{ days/yr} = 6.90 \text{ lb/day (annual average) -}$$

Assume LTA = 6.90 lb/day -

$$AML = LTA \times \exp[z\sigma_n - 0.5\sigma_n^2] \quad \text{(from Table 5-2 of the TSD) -}$$

Where: -

CV = coefficient of variation = 0.6 (a default value for < 10 effluent samples, since only 8 phosphorus samples were reported under the current permit)

n = 4 (number of samples in a month)

$$\sigma_4^2 = \ln((CV^2/n)+1) = \ln((0.6^2/4) + 1) = 0.0862$$

$$\sigma_4 = 0.294$$

z = percentile exceedance probability for AML (95%) = 1.645

$$AML = 6.90 \times \exp[(1.645 \times 0.294) - (0.5 \times 0.0862)] = 10.7 \text{ lb/day}$$

Calculating the Average Weekly Limit

The AWL is calculated from the following relationship with the AML (from Table 5-3 of the TSD):

$$AWL = \frac{\exp[z_m \sigma - 0.5 \sigma^2]}{\exp[z_a \sigma_4 - 0.5 \sigma_4^2]} \times AML$$

Where CV = 0.6, the default value, as above

$$\sigma^2 = \ln(CV^2 + 1) = \ln(0.6^2 + 1) = 0.307$$

$$\sigma = 0.554$$

z_m = percentile exceedance probability for AWL (99%) = 2.326

z_a = percentile exceedance probability for AML (95%) = 1.645

$$AWL = - \frac{\exp[(2.326 \times 0.554) - (0.5 \times 0.307)]}{\exp[(1.645 \times 0.294) - (0.5 \times 0.0862)]} \times 10.7 \text{ lb/day}$$

$$AWL = 20.4 \text{ lb/day}$$

Interim Limit

The highest existing monthly average phosphorus load based on phosphorus monitoring and the current design flow is 52 lbs/day. An interim limit at the current discharge of maximum loading of 52 lbs/day is established.

An average weekly limit (AWL) is derived using the following procedure from the TSD.

$$AWL = 1.5 \times AML$$

$$\text{Interim Limit: } AWL = 1.5 \times 52 \text{ lbs/day} = 78 \text{ lbs/day}$$

Table D-2, below, details the calculations for reasonable potential.

Table D-2
REASONABLE POTENTIAL FOR AQUATIC LIFE

Parameter	State Water Quality Standard		Max concentration at edge of...		LIMIT REQ'D?	Effluent percentile value	Pn	Max effluent conc. measure	Coeff Variation	# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor	
	Ambient Conc.	Acute	Chronic	Acute Mixing Zone										Chronic Mixing Zone
	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	CV	n				
Total Ammonia Nitrogen	0.06	1.77	0.716	0.702	0.487	NO	0.99	0.562	6.4	1.397	8	9.74	97	146

Appendix F: IDEQ 401 Certification



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way #300 • Pocatello, ID 83201 • (208) 236-6160
www.deq.idaho.gov

C. L. "Butch" Otter, Governor
Curt Fransen, Director

21 March 2014
Michael J. Lidgard
NPDES Permits Unit Manager
EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle WA 98101-3140

RE: Final 401 Certification of the Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Facility, Bingham County, Idaho, NPDES Permit No. ID-0020133-0.

Dear Mr. Lidgard:

The Pocatello Regional Office of the Idaho Department of Environmental Quality has reviewed the proposed final NPDES permit for the Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Facility. Section 401 of the Federal Clean Water Act requires that states issue certifications for activities which are authorized by a Federal permit and that may result in a discharge to surface waters. In Idaho, the Department of Environmental Quality (DEQ) is responsible for reviewing these activities and evaluating whether the activity will comply with Idaho Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal permit cannot be issued until DEQ has provided a certification or waived certification either expressly or by taking no action.

Attached under this cover please find the Final 401 Certification for NPDES Permit No. ID-0020133-0. Please call me at 208-236-6160 to discuss any concerns or questions regarding this final document.

Sincerely,

/s/ Lynn Van Every

Lynn Van Every
Regional Water Quality Manager

Cc: Bruce Olenick, Regional Administrator, Pocatello
Miranda Adams, 401 Program Coordinator, Boise



Idaho Department of Environmental Quality Final §401 Water Quality Certification

March 21, 2014

NPDES Permit Number(s): Eastern Idaho Regional Wastewater Treatment Authority Oxbow Wastewater Treatment Plant, Permit #ID-0020133-0

Receiving Water Body: Snake River

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon its review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

The Oxbow Wastewater Treatment Plant discharges the following pollutants of concern: BOD₅, TSS, *E. coli*, pH, and total phosphorus for which effluent limits have been developed. No effluent limits are proposed for total ammonia.

Receiving Water Body Level of Protection

The Oxbow Wastewater Treatment Plant discharges to the Snake River within the American Falls subbasin assessment unit (AU) 17040206SK022_04 (river mile 791 (T01N, R37E, Sec. 10) to American Falls Reservoir). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. In addition to these designated uses, all waters of the state are protected for wildlife habitat, aesthetics, and agricultural and industrial water supply.

The cold water aquatic life and recreation beneficial uses in this Snake River AU are not fully supported due to excess mercury (2010 Integrated Report). As such, DEQ will provide Tier 1 protection only for these two uses (Idaho Code§ 39-3603(2)(b)).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

This reach of the Snake River is impaired by mercury and DEQ has not scheduled TMDL development to address this impairment listing. The WQS stipulate that either there be no

further impairment of the designated or existing beneficial uses or that the total load of the impairing pollutant remains constant or decreases (IDAPA 58.01.02.055.04 and 58.01.02.055.05). DEQ has no data to suggest that the discharge from the Oxbow Waste Water Treatment Plant is contributing to this impairment. DEQ has determined that this discharge permit will comply with these provisions of Idaho WQS.

The EPA-approved American Falls Subbasin Total Maximum Daily Load Plan: Subbasin Assessment and Loading Analysis (May 2012 rev., approved by EPA in August 2012) establishes wasteload allocations for total suspended sediment (TSS) and total phosphorus (TP). These wasteload allocations are designed to ensure the Snake River and American Falls Reservoir will maintain and/or achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. While the Snake River AU is not impaired by TP or TSS, pollutant levels in the Snake River affect water quality in the American Falls Reservoir. Therefore, wasteload allocations were assigned to the City of Shelley's wastewater discharge and are therefore applicable to the Oxbow Wastewater Treatment Plant. The effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that comply with these wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the American Falls TMDL. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Snake River in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Compliance Schedule

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality-based effluent limits issued in a permit for the first time. Oxbow Wastewater Treatment Plant cannot immediately achieve compliance with the effluent limits for total phosphorus; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth in section I.C. of this discharge permit. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

Other Conditions

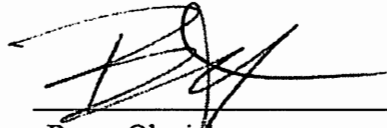
This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or

other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the “Rules of Administrative Procedure before the Board of Environmental Quality” (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Lynn Van Every, Pocatello Regional Office, (208) 236-6160 or lynn.vanevery@deq.idaho.gov.



Bruce Olenick
Regional Administrator
Pocatello Regional Office