Region 10, NPDES Permits Unit
1200 6th Ave
Suite 900 M/S OWW-130
Seattle, WA 98101

Revised Fact Sheet

Public Comment Start Date: May 7, 2013
Public Comment Expiration Date: June 6, 2013

Technical Contact: Brian Nickel
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Proposed Reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA)

City of Ashton
Wastewater Treatment Plant

The EPA Proposes To Reissue NPDES Permit

The EPA is reopening the public comment period on the draft permit for the facility referenced above. The revised draft permit includes significant changes from the version that was issued for public comment on November 20, 2009, as described in this revised fact sheet.

The EPA proposes to issue an NPDES permit to 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 Clean Water Act Section 401 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
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650

Public Comment
Pursuant to 40 CFR 124.14(c), at this time, the EPA is only accepting comments on aspects of the draft permit that are different from those in the draft permit that was issued for public comment on November 20, 2009. These are as follows:

- The effluent limits and effluent monitoring requirements for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) have been revised.
- The permit no longer proposes a schedule of compliance for the new water quality-based total residual chlorine limits.
- The compliance schedule for the new water quality-based effluent limits for total ammonia as N has been revised.
- Interim effluent monitoring requirements for total ammonia as N have been revised.
- The draft permit proposes a compliance evaluation level for total residual chlorine effluent limits.
- Receiving water monitoring requirements for dissolved oxygen, total phosphorus and total nitrogen have been revised.

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.

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:

US EPA Region 10
950 W Bannock Suite 900
Boise, ID 83702
(208) 378-5746

Idaho Department of Environmental Quality
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650

Ashton Public Library
925 Main Street
Ashton, ID 83420
(208) 652-7280

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Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30Q10	30 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.
AML	Average Monthly Limit
AWL	Average Weekly Limit
BOD_5	Biochemical oxygen demand, five-day
BMP	Best Management Practices
ºC	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
IDEQ	Idaho Department of Environmental Quality
I/I	Infiltration and Inflow
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
N	Nitrogen
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SS	Suspended Solids
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WQBEL	Water quality-based effluent limit
WQS	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:

City of Ashton
Wastewater Treatment Plant

Physical Location:
West of U.S. Highway 20, North of Ashton
44º 5' 4.24" N latitude
111º 27' 40.65" W longitude

Mailing Address:
P.O. Box 689
Ashton, ID 83420

Contact: Delray Jensen, Operator

II. Scope of Public Comment Period

As stated in the public notice, the EPA is only accepting comments on permit conditions that are different from those proposed in the original draft permit for this facility. The original draft permit was issued for public comment on November 20, 2009. The changed conditions are:

- The effluent limits and effluent monitoring requirements for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) have been revised.
- The permit no longer proposes a schedule of compliance for the new water quality-based total residual chlorine limits.
- The schedule of compliance for the new water quality-based total ammonia as N limits has been revised.
- Interim effluent monitoring requirements for total ammonia as N have been revised.
- The draft permit proposes a compliance evaluation level for total residual chlorine effluent limits.
- Receiving water monitoring requirements for dissolved oxygen, total phosphorus and total nitrogen have been revised.

III. Facility Information

A. Treatment Plant Description

The City of Ashton owns, operates, and has maintenance responsibility for the wastewater treatment plant, which treats domestic sewage from local residents and commercial establishments. The wastewater treatment plant uses a four-cell lagoon to provide secondary treatment. Treated wastewater is disinfected by chlorination. The plant's design flow is 0.365 mgd. The average flow rate is 0.18 mgd, according to the permit application. The maximum

daily flow rate over the term of the previous permit was 0.32 mgd, according to discharge monitoring reports (DMRs).

See Appendix A for additional facility information and Appendix B for a map of the treatment plant location.

IV. Receiving Water

A. Overview

This facility discharges to an unnamed perennial stream, which is a tributary of Spring Creek, which is a tributary of the Henry's Fork (sometimes called the North Fork) of the Snake River. The water quality standards and low flow conditions of the receiving water are described in the fact sheet dated November 20, 2009.

B. Antidegradation

The IDEQ has completed an antidegradation review which is included in the draft 401 certification for this permit. See Appendix D for the State's draft 401 water quality certification and Appendix E for the City's alternatives analysis and social and economic justification. 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).

V. 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. Except for the effluent limits for BOD_5 and TSS, the bases for the effluent limits in the draft permit are provided in the fact sheet dated November 20, 2009. The basis for the revised effluent limits for BOD_5 and TSS is explained in Appendix C to this fact sheet. The EPA is specifically requesting comments on the revised effluent limits for BOD_5 an TSS.

B. Proposed Effluent Limitations

Below are the proposed effluent limits that are in the draft permit.

1. The permittee must not discharge floating, suspended, or submerged matter of any kind in amounts causing nuisance or objectionable conditions or that may impair designated beneficial uses.
2. Removal Requirements for BOD_5 and TSS: The monthly average effluent concentration must not exceed 15 percent of the monthly average influent concentration. Percent removal of BOD_5 and TSS must be reported on the Discharge Monitoring Reports (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. The permittee must not discharge floating, suspended, or submerged matter of any kind in amounts causing nuisance or objectionable conditions or that may impair designated beneficial uses of the receiving water.

Table 1 (below) presents the proposed numeric effluent limits.

Table 1: 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	91	137	—
	% removal	85% (min.)	—	—
Total Suspended Solids (TSS)	mg/L	30	45	—
	lb/day	91	137	—
	% removal	85% (min.)	—	—
E. Coli	#/100 ml	126[1]	—	406[2]
pH	s.u.	6.5 – 9.0 at all times		
Total Residual Chlorine	µg/L	9.0	—	18.1
	lb/day	0.027	—	0.055
Total Ammonia as N (Final)	mg/L	1.7	—	3.5
	lb/day	5.3	—	11.6
Total Ammonia as N (Interim)	mg/L	25	34	—
	lb/day	76	103	—

Notes:
1. Geometric mean.
2. Instantaneous/single sample maximum.

C. Compliance Schedules

The 2009 draft permit proposed schedules of compliance for the new water quality-based effluent limits for both chlorine and ammonia. The City has since installed a dechlorination system, which will allow it to meet the new water quality-based effluent limits for chlorine. Therefore, the revised draft permit does not propose a schedule of compliance for chlorine.

The schedule of compliance for new water quality-based ammonia limits has been changed. The schedule of compliance proposed in the 2009 draft permit provided an option for the permittee to cease its discharge to waters of the United States instead of upgrading the POTW to meet the new water quality-based effluent limits. The City evaluated the possibility of eliminating its discharge in its alternatives analysis and social and economic justification for antidegradation review (Appendix E). The City determined that "eliminating discharge would require significant additional funds which are beyond the capacity of the residents of Ashton to pay." The City determined that upgrading the existing WWTP to provide removal of ammonia is the least degrading feasible alternative.

The State of Idaho's revised draft CWA Section 401 certification proposes a schedule of compliance for an upgrade of the WWTP to provide removal of ammonia. The schedule requires

compliance with the final water quality-based effluent limits for ammonia within five years and six months of the effective date of the final permit. Consistent with federal regulations for compliance schedules (40 CFR 122.47), the schedule sets forth interim requirements and dates for their achievement. Interim dates in a compliance schedule may be changed without public review and comment, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement (40 CFR 122.63(c)).

The EPA is specifically requesting comments on the revised compliance schedule for ammonia and the deletion of the compliance schedule for chlorine.

D. Compliance Evaluation Level for Chlorine

The EPA has determined that the proposed final effluent limits for total residual chlorine are not quantifiable using EPA-approved methods. The EPA will use the minimum level (ML) of 50 µg/L as the compliance evaluation level for this parameter. The permittee will be compliant with the total residual chlorine limitations if the average monthly and maximum daily chlorine concentrations are less than 50 µg/L and the average monthly and maximum daily mass discharges of chlorine are less than 0.152 lb/day. The EPA is specifically requesting comments on the compliance evaluation level for chlorine.

VI. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permit also requires the permittee to perform effluent monitoring required by part B.6 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 Discharge Monitoring Reports (DMRs) and on the application for renewal, as appropriate, to the U.S. Environmental Protection Agency (EPA).

B. Effluent Monitoring

In general, the monitoring requirements in the revised draft permit are the same as those in the November 2009 draft permit, and are explained in the fact sheet dated November 20, 2009. The exceptions are explained below.

In the November 2009 draft permit, the EPA proposed to increase the monitoring frequency for BOD_5 and TSS from once per month (which was the frequency in the 2001 permit) to twice per month, because the effluent concentrations of BOD_5 and TSS were sometimes greater than the proposed average monthly effluent limits, which were 45 mg/L at that time. In a letter dated December 28, 2009, the City of Ashton asked the EPA to re-evaluate the proposed monitoring frequency for BOD_5, TSS, and ammonia.

The EPA has re-evaluated the BOD_5 and TSS monitoring data for the City of Ashton and has determined that, since January 1, 2005, the monthly average BOD_5 and TSS effluent concentrations have been less than or equal to the proposed revised monthly average effluent limits of 30 mg/L at least 95% of the time. Therefore, the EPA believes that it is not necessary to require twice-per-month monitoring for BOD_5 and TSS, and the EPA proposes to revert to the once-per-month monitoring frequency in the 2001 permit.

Similarly, the EPA has re-evaluated the monitoring frequency for ammonia. Since January 2005, the effluent ammonia concentration has been less than the proposed interim average monthly effluent limit 95% of the time. While the EPA believes that twice-per-month monitoring is necessary for ammonia once the final, water quality-based effluent limits become effective, the EPA believes that once-per-month monitoring of ammonia is adequate to characterize the discharge, during the term of the compliance schedule, while the interim effluent limits are in effect. The EPA is specifically requesting comments on the revised effluent monitoring requirements.

Table 2: Effluent Monitoring Requirements

Parameter	Units	Sample Location	Sample Frequency	Sample Type
Flow	mgd	Influent or Effluent	Continuous	recording
BOD_5	mg/L	Influent & Effluent	1/month	grab
	lb/day	Influent & Effluent		calculation[1]
	% Removal	% Removal	1/month	calculation[2]
TSS	mg/L	Influent & Effluent	1/month	grab
	lb/day	Influent & Effluent		calculation[1]
	% Removal	% Removal	1/month	calculation[2]
pH	standard units	Effluent	1/week	grab
E. Coli	#/100 ml	Effluent	5/month	grab
Total Residual Chlorine	µg/L	Effluent	1/week	grab
	lb/day	Effluent		calculation[1]
Total Ammonia as N (Final)	mg/L	Effluent	2/month	grab
	lb/day	Effluent		calculation[1]
Total Ammonia as N (Interim)	mg/L	Effluent	1/month	grab
	lb/day	Effluent		calculation[1]
Total Phosphorus	mg/L	Influent & Effluent	2/year	grab
Dissolved Oxygen	mg/L	Effluent	2/year	grab
Nitrate + Nitrite	mg/L	Effluent	2/year	grab
Oil and Grease	mg/L	Effluent	2/year	grab
Temperature	ºC	Effluent	1/week	grab
Total Dissolved Solids	mg/L	Effluent	2/year	grab
Total Kjeldahl Nitrogen	mg/L	Effluent	2/year	grab

Notes:
1. Loading is calculated by multiplying the concentration in mg/L by the flow in mgd and a conversion factor of 8.34. If the concentration is measured in µg/L, the conversion factor is 0.00834.
2. Percent removal is calculated using the following equation:
(average monthly influent – average monthly effluent) ÷ average monthly influent.

C. Surface Water Monitoring

In general, the surface water monitoring requirements are explained in the fact sheet dated November 20, 2009. In the 2009 draft permit, the EPA proposed quarterly surface water monitoring for dissolved oxygen, upstream and downstream from the point of discharge, to

determine if water quality-based effluent limits for biochemical oxygen demand and/or dissolved oxygen are necessary when the permit is reissued. The EPA proposes to reduce the monitoring frequency for dissolved oxygen in the receiving water to twice per year, so that the receiving water monitoring frequency is the same as the effluent monitoring frequency.

In the revised draft permit, the EPA also proposes annual monitoring for total nitrogen and total phosphorus in the receiving water. These data will be used to determine if water quality-based effluent limits for nutrients are necessary when the permit is reissued.

The EPA is specifically requesting comments on the revised receiving water monitoring requirements.

VII. 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.

VIII. Other Permit Conditions

A. Quality Assurance, Operation and Maintenance, and Emergency Response and Public Notification Plans

The quality assurance plan, operation and maintenance plan, and emergency response and public notification plan requirements of the draft permit are explained in the fact sheet dated November 20, 2009.

B. 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.

IX. 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. The EPA has determined that the issuance of this NPDES permit will have no effect on

threatened or endangered species. Therefore, consultation is not required for this action. However, the EPA will notify USFWS and NOAA Fisheries of the issuance of this draft permit and will consider any comments made by the Services prior to issuance of a final permit. See the fact sheet dated November 20, 2009 for more information.

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).

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.

The EPA has determined that issuance of this permit will not adversely affect EFH in the vicinity of the discharge. Neither the unnamed tributary that receives the discharge, nor Spring Creek, nor the Henry's Fork of the Snake River are designated as EFH. The EPA has provided NOAA Fisheries with copies of the draft permit and fact sheet during the public notice period. Any comments received from NOAA Fisheries regarding EFH will be considered prior to reissuance of this permit.

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.

X. References

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

Appendix A: Facility Information

General Information

NPDES ID Number:	ID0023710
Physical Location:	West of U.S. Highway 20, North of Ashton 44º 5' 4.24" N latitude 111º 27' 40.65" W longitude
Mailing Address:	P.O. Box 689 Ashton, ID 83420
Facility Background:	The most recent NPDES permit for the wastewater treatment plant was issued and became effective on August 9, 2001, and expired on August 9, 2006. An NPDES application for permit reissuance was received by the EPA on October 16, 2006. The first NPDES permit was issued to this facility in December 1974.

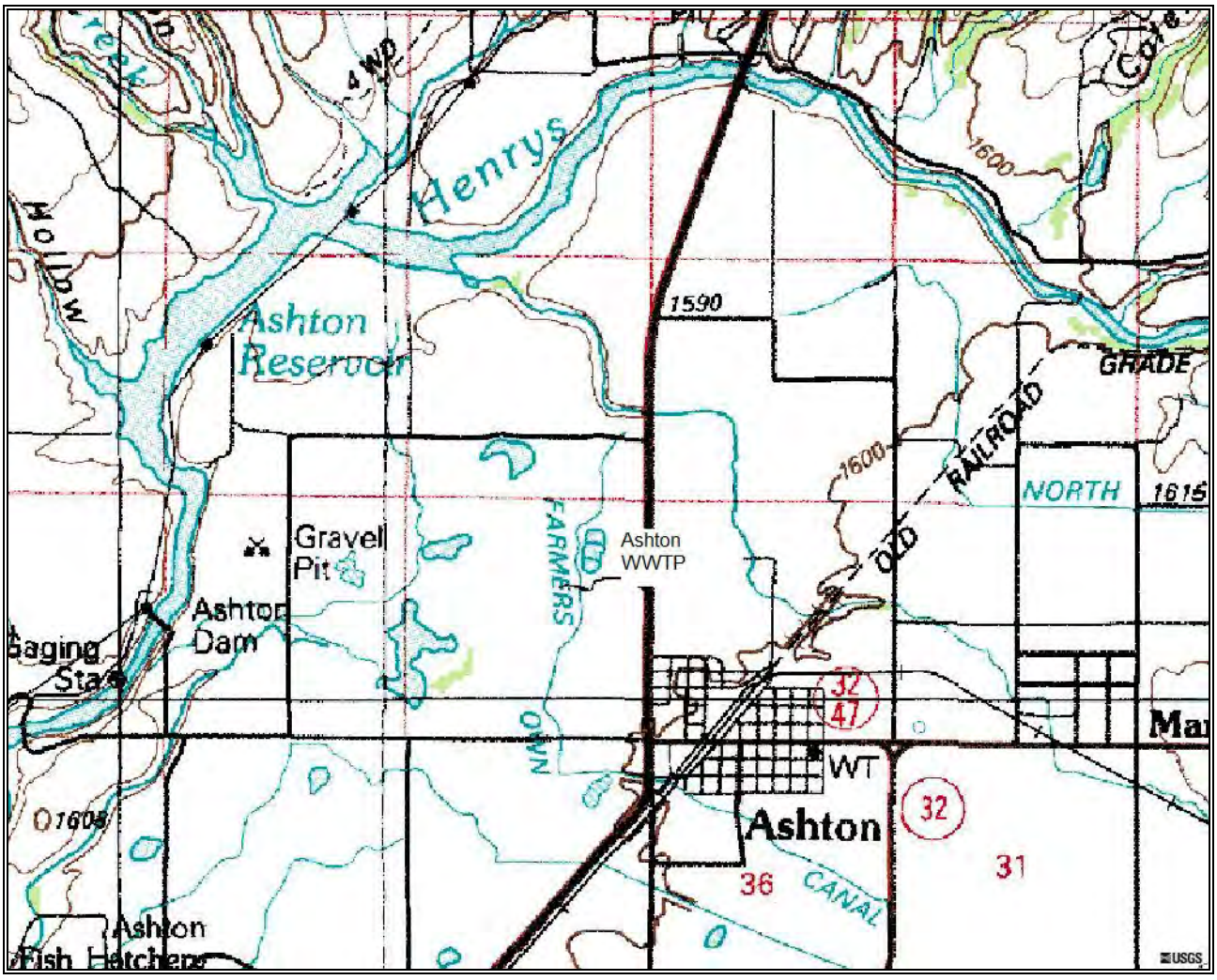
Facility Information

Type of Facility:	Publicly Owned Treatment Works (POTW)
Treatment Train:	4-cell aerated lagoon, chlorination, dechlorination
Flow:	Design flow is 0.365 mgd. Average flow is 0.18 mgd; the maximum daily flow is 0.32 mgd.
Outfall Location:	latitude 44º 5' 12" N; longitude 111º 27' 45" W

Receiving Water Information

Receiving Water:	An unnamed perennial stream which is tributary to Spring Creek, which is tributary to the Henry's Fork of the Snake River
Watershed:	Upper Henry's (HUC 17040202)
Beneficial Uses:	Cold water aquatic life, primary contact recreation, industrial and agricultural water supply, wildlife habitats, and aesthetics

Appendix B: Facility Map



Appendix C: Basis for Effluent Limits

The following discussion explains in more detail the statutory and regulatory basis for the technology and water quality-based effluent limits in the draft permit. Only the effluent limits that differ from those proposed in the November 2009 draft permit are discussed. The bases for all other effluent limits are explained in the fact sheet dated November 20, 2009.

A. Technology-Based Effluent Limits

Federal Secondary Treatment Effluent Limits

The CWA requires POTWs to meet 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. 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 BOD_5, TSS, and pH.

For most POTWs, the applicable technology-based effluent limits are found in 40 CFR 133.102. These are the technology-based effluent limits that appeared in the 2001 final permit. However, some facilities are eligible for "treatment equivalent to secondary" effluent limits found in 40 CFR 133.105, which are less stringent than the "secondary treatment" limits of 40 CFR 133.102.

In the fact sheet dated November 20, 2009, the EPA determined that the Ashton WWTP was eligible for treatment equivalent to secondary effluent limits. However, EPA has re-evaluated the City's effluent data and determined that the City is not eligible for treatment equivalent to secondary effluent limits.

In order to be eligible for treatment equivalent to secondary, the 95th percentile 30-day average effluent concentrations of BOD_5 and TSS must be greater than 30 mg/L (40 CFR 133.101(f), (g)). Since January 1, 2005, the 95th percentile 30-day average effluent concentrations of BOD_5 and TSS have been 29.95 mg/L and 26.95 mg/L, respectively. Therefore, the facility is not eligible for treatment equivalent to secondary effluent limits, and the facility must comply with the more stringent secondary treatment effluent limits of 40 CFR 133.102.

The federally promulgated secondary effluent treatment limits are listed in Table C-1.

Table C-1: Secondary Treatment Effluent Limits (40 CFR 133.102)

Parameter	Average Monthly Limit	Average Weekly Limit	Range
BOD_5	30 mg/L	45 mg/L	---
TSS	30 mg/L	45 mg/L	---
Removal Rates for BOD_5 and TSS	85% (minimum)	---	---
pH	---	---	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:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34[1]

The mass limits for BOD_5 and TSS are more stringent than those in the previous permit. According to the fact sheet for the previous permit, the EPA used a design flow of 1.0 mgd to calculate effluent limits (see 2001 Fact Sheet at Page 4). The most recent application, received on May 24, 2006, states that the design flow of the facility is 0.365 mgd. The EPA has used the design flow from the most recent application to calculate the mass limits in the draft permit.

The average monthly and average weekly loading limits for BOD_5 and TSS are as follows:

Average Monthly Limits

30 mg/L × 0.365mgd × 8.34lb/gallon = 91 lb/day

Average Weekly Limits

45 mg/L × 0.365mgd × 8.34lb/gallon = 137 lb/day

[1] 8.34 is a conversion factor equal to the density of water in pounds per gallon

Appendix D: Draft Clean Water Act Section 401 Certification

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STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

900 North Skyline, Suite B • Idaho Falls, ID 83402 • (208) 528-2650

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

April 19, 2013

Mr. Michael Lidgard
US Environmental Protection Agency, Region 10
1200 6th Avenue, OW-130
Seattle, Washington 98101

RE: DRAFT §401 Water Quality Certification for the Draft NPDES Permit No. ID-0023710-0 for the City of Ashton

Dear Mr. Lidgard:

The State of Idaho Department of Environmental Quality (DEQ) received the preliminary draft National Pollutant Discharge Elimination Program (NPDES) permit for the city of Ashton's discharge from their Wastewater Treatment Plant.

After review of the preliminary draft permit, DEQ drafted the §401 water quality certification and antidegradation review (ADR), determining the potential for significant degradation existed with some proposed effluent limits. The City of Ashton then completed the required Alternatives Analysis (AA) and Social and Economic Justification (SEJ).

Enclosed, please find the draft §401 water quality certification, complete with the antidegradation review (ADR) and supporting documentation including the AA and SEJ addressing the ammonia criterion outlined in the preliminary draft permit and draft water quality certification.

Please direct any questions to Troy Saffle at 208.528.2650 or troy.saffle@deq.idaho.gov.

Sincerely,

Erick Neher
Regional Administrator
Idaho Falls Regional Office

enclosures (3)

c: Doug Conde, Deputy Attorney General, TRIM Reference
Barry Burnell, Water Quality Division Administrator, TRIM Reference
Brain Nickel, EPA Region 10, Seattle, w/ enclosures
Miranda Adams, TRIM Reference

2013AKF33

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

April 15, 2013

NPDES Permit Number(s): ID-0023710-0, City of Ashton Waste Water Treatment Plant

Receiving Water Body: Unnamed spring creek, tributary to Spring Creek

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).

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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 City of Ashton discharges the following pollutants of concern: biochemical oxygen demand (BOD_5), total suspended solids (TSS), *E. coli,* total residual chlorine, total ammonia, alkalinity, nitrate plus nitrite, oil and grease, total dissolved solids, total Kjeldahl Nitrogen, temperature and total Phosphorus. Effluent limits have been developed for biochemical oxygen demand (BOD_5), total suspended solids (TSS), *E. coli,* total residual Chlorine, ammonia. Both interim and final limits are proposed for total residual Chlorine and total ammonia. No effluent limits are proposed for , dissolved oxygen, alkalinity, nitrate plus nitrite, oil and grease, total dissolved solids, total Kjeldahl Nitrogen and total Phosphorus.

Receiving Water Body Level of Protection

The City of Ashton discharges to an unnamed tributary to Spring Creek, within the Upper Henry's assessment unit (AU) ID17040202SK001_02. The unnamed tributary and Spring Creek are part of water body identification (WBID) unit US-1 in the Upper Henrys Subbasin. The WBID has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contract recreation, and domestic water supply. Additionally, all waters of the State are protected for aesthetics, wildlife habitat, and agricultural, and industrial water supply.

The cold water aquatic life and contact recreation beneficial uses in this AU have not yet been assessed (2010 Integrated Report). Unassessed water bodies are provided an appropriate level of protection on a case-by-case basis using available information (IDAPA 58.01.02.052.05.b). Monitoring by DEQ in 2011 indicated no bacteria or temperature standard exceedences. On the basis of this information, DEQ has determined that the receiving water body is a high quality water body. Therefore, Tier 2 protections, in addition to Tier 1 protections, apply to both the aquatic life use and the recreation beneficial uses.

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 City of Ashton permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. DEQ has no information that indicates the presence of any existing uses

aside from those that have been designated. Therefore, the terms of the permit ensure that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected.

High-Quality Waters (Tier 2 Protection)

The tributary to Spring Creek is considered high quality for recreation and cold water aquatic life. As such, the water quality relevant to recreation and cold water aquatic life uses of the tributary to Spring Creek must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to recreation and cold water aquatic life uses of the tributary to Spring Creek (IDAPA 58.01.02.052.05). These include the following: temperature, BOD_5, TSS, E. coli, pH, Chlorine, Ammonia, alkalinity, DO, oil/grease, Nitrogen, and Phosphorus. Effluent limits are set in the proposed permit for all these pollutants except temperature, alkalinity, DO, oil/grease, Nitrogen and Phosphorus.

For a reissued permit or license, the effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as authorized in the current permit and the water quality that would result from the activity or discharge as proposed in the reissued permit or license (IDAPA 58.01.02.052.06.a). For a new permit or license, the effect on water quality is determined by reviewing the difference between the existing receiving water quality and the water quality that would result from the activity or discharge as proposed in the new permit or license (IDAPA 58.01.02.052.06.a). Because the City of Ashton is not currently permitted (the previous permit expired and a timely application for a new permit was not made) the City of Ashton discharge is considered a new activity or discharge (IDAPA 58.01.02.010.65).

Pollutants with Limits in the Proposed Permit

For pollutants that will have limits under the new permit, the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.06.a.ii). For the City of Ashton's permit, this means determining the permit's effect on water quality based upon the limits for BOD_5, TSS, E. coli, pH, total residual Chlorine, and total Ammonia in the proposed permits. Table 1 provides a summary of the proposed permit limits.

Table 1. Proposed permit limits for pollutants of concern.

Pollutant	Units	Proposed Permit		
		Average Monthly Limit	Average Weekly Limit	Single Sample Limit
Five-Day BOD	mg/L	30	45	—
	lb/day	91	137	—
	% removal	85%	—	—
TSS	mg/L	30	45	—
	lb/day	91	137	—
	% removal	85%	—	—
pH	standard units	6.5 – 9.0		
E. coli	no./100 mL	126		406
Total Residual Chlorine (final)	mg/L	9.0	—	18
	lb/day	0.027	—	0.055
Total Ammonia (final)	mg/L	1.7	—	3.5
	lb/day	5.3		11.6
Total Ammonia (interim)	mg/L	25	34	
	lb/day	76	103	

Because the discharge is treated as a new discharge, and given the comparison of the effluent flow to receiving water flow, the discharge of BOD_5, TSS, E. coli, pH, total residual Chlorine, and total Ammonia as allowed under the limits in the proposed permit will cause an increase in the concentration of these pollutants in the receiving water, and therefore, will cause degradation.

Pollutants with No Limits

There are several pollutants of concern (temperature, DO, Nitrogen, and Phosphorus) relevant to Tier 2 protection of aquatic life that currently are not limited and for which the proposed permit also contains no limit (Table 1). For such pollutants, future discharge quality will be estimated from available discharge quality data since the last permit or license was issued accounting for any changes in production, treatment or operation (IDAPA 58.01.02.052.06.a.ii). Because the discharge is treated as a new discharge, and given the comparison of the effluent flow to receiving water flow, the discharge will cause an increase in the concentration of these pollutants in the receiving water, and therefore, will cause degradation.

When a discharge is determined to cause degradation, DEQ must determine whether the degradation is significant (IDAPA 58.01.02.052.08.a). Except for ammonia, there was insufficient data for DEQ to do a significance analysis. With respect to ammonia, DEQ has determined that the discharge will decrease the assimilative capacity of the receiving water by more than 10 percent. As a result, the discharge will result in significant degradation and can only be allowed if the degradation is determined necessary to accommodate important social or economic development.

Alternatives Analysis

Significant degradation can only be allowed if it is determined to be necessary to accommodate important economic or social development (IDAPA 58.01.02.052.08). In order to determine whether the degradation is necessary, an alternatives analysis must be performed that analyzes alternatives aimed at selecting the best combination of site, structural, managerial and treatment

approaches that can be reasonably implemented to avoid or minimize the degradation of water quality (IDAPA 58.01.02.052.08.c).

The City of Ashton provided DEQ with the *Antidegradation Analysis for the City of Ashton WWTP, NPDES Permit # ID-0023710, Step Two: Alternatives Analysis and Social and Economic Justification* (January 9, 2013). In this document, five alternatives were reviewed. All of the alternatives are focused on addressing ammonia in the City's discharge. The proposed new NPDES permit contains ammonia limits that require a higher level of treatment than the City's current treatment facility can provide. The five alternatives reviewed include: (1) current operation—wastewater reuse during the growing season and discharge to surface water in the non-growing season; (2) relocation of the outfall from the current receiving water to the Ashton Reservoir; (3) year-round wastewater reuse; (4) mechanical treatment plant; and (5) fixed film process.

The City of Ashton prefers the fixed film alternative. The current operation does not provide sufficient treatment to meet the new ammonia limits in the proposed NPDES permit, and therefore, is not an option the City can use. The wastewater reuse and mechanical treatment options are not reasonable alternatives given both total cost and cost effectiveness of pollutant reduction. Moving the outfall is, according to the City's estimation, the least costly of the alternatives and would completely remove pollutants from the current receiving water. This alternative, however, would not remove pollutants from the environment, but would instead simply transfer the same level of pollutants to the Ashton Reservoir.

While the fixed film alternative is not the least degrading option for the City, it is the best alternative in terms of cost effectiveness at pollutant reduction. Moreover, unlike relocating the outfall, the fixed film alternative will remove pollutants from the environment. Therefore, considering total costs, cost effectiveness and environmental costs and benefits, selecting the fixed film alternative as the least degrading option that is reasonable is justified (IDAPA 58.01.02.052.08.c.iv(4)).

Social or Economic Justification

Significant degradation deemed necessary must also be determined to accommodate important social or economic development (IDAPA 58.01.02.052.08.d). As previously noted, the City of Ashton provided DEQ with an Antidegradation Analysis document that included a social or economic justification.

The continued treatment of wastewater is a critical service for the affected community. Without wastewater treatment, the City would face significant environmental and public health consequences, as well as economic impacts. Given these factors, as well as the other information provided by the City in its social or economic justification, DEQ has determined that the degradation that will result from the preferred alternative is socially justified.

Other Source Controls

In allowing degradation in high quality waters, DEQ must assure that there shall be achieved in the watershed the highest statutory and regulatory requirements for all new and existing point sources and cost-effective and reasonable best management practices (BMPs) for all nonpoint source controls (IDAPA 58.01.02.052.08.b). The City of Ashton is the only point source to the

unnamed tributary to Spring Creek. The City's compliance with its new NPDES permit will ensure the highest statutory and regulatory requirements for point sources shall be achieved. Nonpoint sources in the watershed are primarily agricultural. Cost effective and reasonable BMPs are identified in the WQS as those set forth in the Idaho Agricultural Pollution Abatement Plan. DEQ has determined that appropriate BMPs as set forth in the Idaho Agricultural Pollution Abatement Plan are being implemented by the agricultural nonpoint sources in the watershed. In sum, there is reasonable assurance that there shall be achieved the highest statutory and regulatory requirements for point sources and cost-effective and reasonable BMPs for nonpoint source control.

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. City of Ashton cannot immediately achieve compliance with the effluent limits for ammonia; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below. 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.

Compliance with the ammonia criterion requires a modification to the current discharge. Based on current information, the City and DEQ believe that the least degrading reasonable alternative that will achieve compliance with the ammonia effluent limits is the fixed film option. The City must complete a Facility Planning Study to fully evaluate this treatment option. If a different treatment option is selected through the Facility Planning process, this treatment option can only be implemented if the City of Ashton establishes it is the least degrading option that is reasonable. The final effluent limits must be met within five years and six months of the effective date of the permit. Prior to meeting final limits, the following milestones must be met:

Table 2. Compliance schedule deliverable and deadlines.

Deliverable	Deadline
Procure Consulting Engineer for FPS	June 1, 2015
Submit a complete application for a wastewater grant to conduct a Facility Planning Study (FPS) and Environmental Information Document (EID)	June 30, 2015
Execute Engineering contracts for FPS	June 30, 2015
Complete FPS	July 31, 2016

Complete EID	December 31, 2016
Submit Letters of Interest for any needed DEQ or Rural Development loans	November 30, 2016
Complete any required designs selected from the FPS	June 30, 2017
Begin any plant upgrades selected from FPS	August 1, 2017
Complete any construction	November 30, 2018

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 Troy Saffle, Idaho Falls Regional Office, at 208.528.2650 or troy.saffle@deq.idaho.gov.

DRAFT

Erick Neher
Regional Administrator
Idaho Falls Regional Office

Appendix E: Alternatives Analysis and Social and Economic Justification

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Antidegradation Analysis
for the
City of Ashton WWTP

NPDES Permit # ID-0023710
Step Two: Alternatives Analysis
and Social and Economic Justification

Prepared for the City of Ashton

Prepared by Schiess & Associates

January 9, 2013

This document is the second step in the Antidegradation analysis required as part of the Idaho Department of Environmental Quality's (IDEQ) §401 Water Quality Certification of the City of Ashton's new National Pollutant Discharge Elimination System (NPDES) permit.

This document includes an alternatives analysis as required in the Idaho antidegradation implementation rule (IDAPA 58.01.02.052.08). This document describes wastewater treatment, disinfection and disposal options that considered by the City of Ashton prior to the recent wastewater treatment plant and wastewater reuse improvements project. An additional treatment alternative that targets ammonia reduction in lagoon systems is included. Portions of this alternatives analysis are taken from the Wastewater Facilities Planning Study prepared by the Dyer Group, LLC in November 2005.

The alternatives analysis focuses on ammonia reduction. Ammonia limits in the draft NPDES permit are the most restrictive of all the limits to meet. Chlorine residual limits are also being tightened in the draft permit, but the recent improvements project installed dechlorination facilities in anticipation of the stricter chlorine limits.

Alternatives Analysis

Relocation or configuration of outfall or diffuser

Earlier analysis indicated the problem with ammonia concentrations stems from effluent discharge into Sewer Creek that has essentially no flow. Calculations in Appendix C (in the Dyer report) indicate that ammonia concentrations will not be a concern if the discharge can be made to Henry's Fork (Ashton Reservoir) where tremendous dilution is available.

This alternative would provide for constructing a dedicated discharge pipeline to accomplish this. It would start at the existing wastewater treatment facility and then would follow the Sewer Creek drainage about 0.4 miles down (northward) to the point where the stream crosses under a county road, and would then follow that county road alignment westerly about 1.8 miles to the Ashton Reservoir where a discharge structure would be constructed.

A small pump station would be constructed and the pipeline would be PVC pressure piping from the pump station to the outlet. A pressure sewer would avoid problems with grade, minimize rock excavation, and eliminate the need for manholes and deep excavation if a gravity line were to be constructed. Dechlorination will take place at the end of the existing chlorine contact chamber where it is currently set up.

The estimated cost of this alternative is $900,000 with approximately $6,100 annually for operation and maintenance.

Process changes/improved efficiency that reduces pollutant discharge

Two types of process changes might be implemented to reduce pollutant discharge to the levels necessary to meet the draft permit limits. The first is a conventional mechanical treatment plant. The second is a fixed film process that has been developed specifically for achieving ammonia reduction in lagoon systems.

Mechanical Treatment Plant: "This alternative would include construction of a mechanical wastewater treatment facility. The concept is that with significant water quality restrictions for discharge to surface waters, then construction of a mechanical treatment facility would provide a much higher level of treatment needed to meet such requirements.

With a price tag of $2.3 million, the need to hire at least two full-time operators, high operation and maintenance costs, and the small size and limited resources of Ashton in being able to first construct and then operate and maintain such a facility, this alternative is not likely to be considered feasible." (Dyer Report, 2005) Annual operation and maintenance is expected to be $126,000.

Fixed Film Addition to Lagoons: This alternative would continue to use the floating aerators currently installed in Cell A and Cell B for BOD_5 and TSS removal and add a fixed film process to Cells B and C to achieve ammonia removal.

The fixed film process consists of individual bioreactors that sit submerged on the floor of the lagoon, each with its own air supply. Each bioreactor, known as a bio-dome consists of four concentrically nested hemispherical ABS plastic domes mounted on a concrete base that is 12 inches high to allow water to freely enter the open space at the bottom. The space between each nested dome is at least four inches and is filled with a plastic bio-media which has a high surface area-to-volume ratio. A fine-bubble air delivery system is installed at the base of the bio-dome. Each dome requires 1- 1.5 CFM of air. The introduction of air at the base of the dome provides process air for the biofilm which forms on the plastic media and provides air lift pumping of water from the bottom of the lagoon up through the bio-dome and out a hole in the top of the dome.

The following is a description of the biological process of ammonia removal taken from a report by Kraig Johnson, PhD, PE entitled "Rural Wastewater Treatment Lagoon Enhancement with Dome Shaped Submerged Bio-film Devices". "Biological nitrification is the desired removal mechanism to get rid of ammonium in wastewater, but for suspended growth, the necessary bacteria are suppressed at cold temperatures. The aerated fixed film biomass inside the domes allows nitrifiers to remain active at temperatures down to near freezing".

The installation requires 147 bio-domes divided between Cells B and C. Blowers could be housed in the existing blower building and a 4 to 6-inch airline extended from the blower building to Cells B and C. Disinfection and dechlorination will take place in the existing facilities. The total installation is expected to cost $700,000 and will allow the city to achieve ammonia concentrations in the treated effluent of less than 1.7 mg/L through the winter months. Annual operation and maintenance of the bio-domes and the

associated blowers is expected to be $16,200.

Seasonal discharge to avoid critical time periods for water quality

The Ashton WWTP currently discharges only seasonally. The facility land applies treated wastewater during the growing season to manage lagoon levels. Cell C and Cell D are drained in the fall and the treated effluent is land applied to reduce the need for winter discharge. The facility starts discharging when Cells C and D are full, usually about mid-January. Discharge continues until June when the growing season starts and land application can resume.

This alternative is considered the "no action" alternative for Ashton. There is no additional cost to continue this mode of operation, but the city cannot meet their new ammonia limits with this alternative.

Non-discharge alternatives such as land application (Wastewater Reuse)

In order to stop discharging in the winter, the city would need to construct a storage lagoon sufficient to hold approximately six months of treated wastewater. The lagoon would also need to be able to accommodate precipitation during this same time period. The city's 2005 wastewater study estimated a 6-9 acre pond would be required for winter storage.

The existing land application site (77 acres) is adequately sized to accommodate wastewater generated during the summer months. According to the wastewater operator, a dry year requires heavy supplementation from surface water to adequately irrigate the crop. A wet year requires no supplementation.

A wet year controls the size of the land application site. We estimate another 50-80 acres would be necessary to accommodate an additional six months of wastewater flows. Since the existing site is bounded on one side by the wastewater lagoons and on the other by an irrigation ditch, this site is not easily expanded. A new site would be necessary with a pivot irrigation system. Dechlorination would not be necessary with this alternative.

Total cost of this alternative is $2.5 million assuming 50 acres of land could be purchased for $10,000 per acre and a 9-acre pond is constructed. Annual operation and maintenance is expected to cost $18,350.

Offsets to the activity or discharge's effect on water quality

There are no upstream activities that could be modified to adequately offset the effect of Ashton's WWTP discharge on Sewer Creek. It has been noted by the wastewater operators that grazing affects water quality in Sewer Creek. Grazing would be considered a non-point source and to our knowledge the ammonia load from grazing to Sewer Creek has not been quantified. However, it is not expected that the elimination of grazing would be sufficient to offset the ammonia load from the treatment plant in its

current configuration.

Cost of Alternatives

Alternative	Capital Cost	O&M Costs	Total Cost over 10 years
1. Relocate Outfall	$900,000	$6,100	$961,000
2. Mechanical WWTP	$2.3 million	$126,000	$3,600,000
3. Fixed Film Process	$700,000	$16,200	$852,000
4. Wastewater Reuse	$2.5 million	$18,350	$2,700,000

Alternative Ranking Based on Cost Effectiveness at Pollutant Reduction

Alternative	Lbs. Removed /year	Annual Cost/lb. removed	Resulting in-stream concentration after full mix
1. Wastewater Reuse	6,383 lbs/yr	$42/lb	0 mg/L (Sewer Creek)
2. Move Outfall	6,383 lbs/yr	$15/lb	0 mg/L (Sewer Creek) 0.01 mg/L (Ashton Res.)
3. Fixed Film Process	6,088 lbs/yr	$14/lb	1 mg/L (Sewer Creek)
4. Mechanical Plant	6,088 lbs/yr	$59/lb	1 mg/L (Sewer Creek)

Although the ranking of the alternatives in the table above is specific to ammonia, the ranking for other pollutants (BOD_5 and TSS) is similar. The land application alternative removes all of the pollutants associated with the WWTP discharge from Sewer Creek. Moving the outfall to Ashton Reservoir shifts the current pollutant loading for BOD_5, TSS and ammonia from Sewer Creek which has a very low assimilative capacity to the reservoir which has much greater assimilative capacity. The fixed film process is similar in cost to moving the outfall. The mechanical treatment plant and land application alternatives are 3-4 times more expensive per pound of pollutant removed than the alternatives to move the outfall or add a fixed film process.

Disinfection was not included in the alternatives above since the ability to dechlorinate was provided and paid for in the last improvements project. With dechlorination, the discharge will not be adding chlorine to the receiving stream whether it is Sewer Creek or the Ashton Reservoir. Dechlorination is not necessary for the reuse alternative.

Identify Environmental Trade-offs

Relocate Outfall

This alternative shifts the current pollutant load from Sewer Creek to the Ashton Reservoir where the assimilative capacity of the receiving water body is much greater. The change in the outfall location helps the city meet expected permit limits, but the environment would no longer benefit from any treatment that may be occurring in Sewer Creek as the stream flows down through the pastures and wetlands prior to combining with Spring Creek. The change would also result in a reduction in flow in Sewer Creek.

Mechanical Plant

A mechanical plant is capable of treating wastewater to a higher standard than aerated lagoons can. The trade-off for improved treatment is higher capital and O&M costs. A mechanical plant is more complex than aerated lagoons and is not always a better option for a small community.

Fixed Film Process

This process utilizes the existing lagoons and will improve water quality in Sewer Creek. The environmental tradeoff is increased power consumption to provide process air to the bio-domes.

Wastewater Reuse

This alternative removes all pollutants associated with the WWTP discharge from Sewer Creek. The growing crop benefits from the nutrients in the wastewater. The environmental trade-offs are that 6-9 acres of farm ground will be taken out of production to be the site of the new winter storage lagoon, and 50-80 acres of farm ground will be restricted in the types of crops that can be grown. Aeration requirements and power consumption might be reduced since treatment requirements for wastewater reuse are often less restrictive than to discharge to a stream.

Wastewater reuse is governed by crop nutrient uptake and irrigation requirements and is not expected to adversely impact groundwater quality.

Affordability

The City of Ashton and DEQ assisted in completing the table on the next page:

Indicator	Year	Data
a) Population served	2010 (US Census Bureau)	1127
b) Number of households	City of Ashton, WW FPS, 2005	630
c) Median Household Income, national	2010 (US Census Bureau)	$51,914
d) Median Household Income, State	2010 (US Census Bureau)	$46,423
e) Median Household Income, County	2010 (US Census Bureau)	$42,523
f) Median Household Income, City	2000 (U.S. Census Bureau)	$39,558 (adjusted to 2010)
g) Major type of employment	Idaho Dep't Labor	Ashton Memorial Nursing Home, Broulim's, Fremont County, Fremont County School District, Dep't Juvenile Corrections, Electric Coop, US Forest Service
h) % of Total Wastewater Flow from Residential & Municipal Sources	City of Ashton, 2012	100%
i) Unemployment Rate, State	Idaho Dep't Labor, Aug 2012	7.4%
j) Unemployment Rate, County	Idaho Dep't Labor, Aug 2012	6.5%
k) Unemployment Rate, City	None Available	
l) Property Tax Revenues	City of Ashton 2012	$ 188,991.00
m) Sales Tax & Miscellaneous Revenues	City of Ashton 2012	$ 84,394
n) Total Gov't Revenues [(l) +(m)]	City of Ashton 2012	$ 273,385
o) Current Market Value of Taxable Property	Fremont County Clerk, 2012	$ 47,547,028
p) Property Tax Delinquency Rate	None Available	
q) Bond Rating – Insured sewer	None Available	
r) Overall Net Debt	City of Ashton 2012	$ 3,978,644

Line f, Median Household Income, City: This information was not yet available from the 2010 census. The city conducted a survey for their block grant application, but did not calculate this number. The median household income from the 2000 census was $30,282. This was adjusted to 2010 dollars using the Bureau of Labor Statistics inflation calculator.

Line k, Unemployment Rate, City: The city does not have a way of calculating this number.

Line p, Property Tax Delinquency Rate: The county collects the property taxes, however they said they do not calculate a delinquency rate.

Line q, Bond Rating – Insured sewer: The city does not have a bond rating, rather they use the Idaho Bond Bank. The City of Rexburg reported they also do not have a bond rating.

The tables on the following pages give the average annualized cost per household for each of the alternatives identified above.

Average Annualized Cost per Household for Alternative #: Move Outfall		
Calculate Total Annual Cost of treatment Option (use new form for each alternative)		
Interest Rate for Financing *(i)*	0.03 (expressed as a fraction)	
Time Period for Financing *(n)*	30 (years)	
Annualization Factor: $\frac{i(1+i)^n}{(i+1)^n-1}$ =	0.051	(1)
Total Capital Cost to be Financed	$900,000	(2)
Annual Operating Costs of Project	$6,100	(3)
Annualized Capital Cost [(1) x (2)]	$45,900	(4)
Total Annual Cost of Project [(3) + (4)]	$52,000	(5)
Calculate the Total Annual Cost to Households		
Total Annual Cost of Project (5) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$52,000	(6)
Total Annual Cost of existing Plant ($) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$270,724	(7)
Total Annual Cost to Households [(6) + (7)]	$322,724	(8)
Calculate the Average Annualized Cost per Household		
$\frac{Total\ Ann.Cost\ to\ Households\ (8)}{Number\ of\ Households} =$	$512	(9)
$\frac{Ave.Ann.Cost\ per\ Household\ (9)}{Median\ Household\ Income} x\ 100 =$	1.3%	(10)
Current Annual Cost per Household	$430	(11)
Change in Cost per Household [(9) – (11)]	$82	(12)

Average Annualized Cost per Household for Alternative #: Mechanical		
Calculate Total Annual Cost of treatment Option (use new form for each alternative)		
Interest Rate for Financing *(i)*	0.03 (expressed as a fraction)	
Time Period for Financing *(n)*	30 (years)	
Annualization Factor: $\frac{i(1+i)^n}{(i+1)^n-1}$ =	0.051	(1)
Total Capital Cost to be Financed	$2,300,000	(2)
Annual Operating Costs of Project	$126,000	(3)
Annualized Capital Cost [(1) x (2)]	$117,300	(4)
Total Annual Cost of Project [(3) + (4)]	$243,300	(5)
Calculate the Total Annual Cost to Households		
Total Annual Cost of Project (5) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$243,300	(6)
Total Annual Cost of existing Plant ($) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$270,724	(7)
Total Annual Cost to Households [(6) + (7)]	$514,024	(8)
Calculate the Average Annualized Cost per Household		
$\frac{Total\ Ann.Cost\ to\ Households\ (8)}{Number\ of\ Households} =$	$816	(9)
$\frac{Ave.Ann.Cost\ per\ Household\ (9)}{Median\ Household\ Income} x\ 100 =$	2.1%	(10)
Current Annual Cost per Household	$430	(11)
Change in Cost per Household [(9) – (11)]	$386	(12)

Average Annualized Cost per Household for Alternative #: Fixed Film		
Calculate Total Annual Cost of treatment Option (use new form for each alternative)		
Interest Rate for Financing *(i)*	0.03 (expressed as a fraction)	
Time Period for Financing *(n)*	30 (years)	
Annualization Factor: $\frac{i(1+i)^n}{(i+1)^n-1}$ =	0.051	(1)
Total Capital Cost to be Financed	$700,000	(2)
Annual Operating Costs of Project	$16,200	(3)
Annualized Capital Cost [(1) x (2)]	$35,700	(4)
Total Annual Cost of Project [(3) + (4)]	$51,900	(5)
Calculate the Total Annual Cost to Households		
Total Annual Cost of Project (5) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$51,900	(6)
Total Annual Cost of existing Plant ($) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$270,724	(7)
Total Annual Cost to Households [(6) + (7)]	$322,624	(8)
Calculate the Average Annualized Cost per Household		
$\frac{Total\ Ann.Cost\ to\ Households\ (8)}{Number\ of\ Households} =$	$512	(9)
$\frac{Ave.Ann.Cost\ per\ Household\ (9)}{Median\ Household\ Income} x\ 100 =$	1.3%	(10)
Current Annual Cost per Household	$430	(11)
Change in Cost per Household [(9) – (11)]	$82	(12)

Average Annualized Cost per Household for Alternative #: Reuse		
Calculate Total Annual Cost of treatment Option (use new form for each alternative)		
Interest Rate for Financing *(i)*	0.03 (expressed as a fraction)	
Time Period for Financing *(n)*	30 (years)	
Annualization Factor: $\frac{i(1+i)^n}{(i+1)^n-1}$ =	0.051	(1)
Total Capital Cost to be Financed	$2,500,000	(2)
Annual Operating Costs of Project	$18,350	(3)
Annualized Capital Cost [(1) x (2)]	$127,500	(4)
Total Annual Cost of Project [(3) + (4)]	$145,850	(5)
Calculate the Total Annual Cost to Households		
Total Annual Cost of Project (5) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$145,850	(6)
Total Annual Cost of existing Plant ($) x Percentage of Total Wastewater Flow Attributable to Residential and Municipal Wastewater Flows	$270,724	(7)
Total Annual Cost to Households [(6) + (7)]	$416,574	(8)
Calculate the Average Annualized Cost per Household		
$\frac{Total\ Ann.Cost\ to\ Households\ (8)}{Number\ of\ Households} =$	$661	(9)
$\frac{Ave.Ann.Cost\ per\ Household\ (9)}{Median\ Household\ Income} x\ 100 =$	1.7%	(10)
Current Annual Cost per Household	$430	(11)
Change in Cost per Household [(9) – (11)]	$231	(12)

Social or Economic Justification (SEJ)

Identify the Affected Community

The residents of Ashton are the most directly affected by the proposed degradation in that they benefit from having a community sewer. The residents of Marysville might also benefit in the future from having community sewer. Residents who border Sewer Creek and utilize the pastures along sewer creek for cattle grazing could be affected by changes in the method of wastewater treatment and discharge from Ashton's wastewater treatment plant. The alternatives that continue to discharge to Sewer Creek will reduce ammonia concentrations in Sewer Creek and improve the overall water quality of Sewer Creek. The alternatives that move the outfall to the Ashton reservoir or reuse the treated wastewater by applying it to a growing crop will reduce wintertime flows in sewer creek.

There are no downstream drinking water intakes that could be affected by the treatment and discharge of Ashton's wastewater. The reuse alternative is not likely to impact groundwater supplies for nearby drinking water wells since reuse is governed by crop irrigation and nutrient uptake requirements.

Important Social or Economic Development Associated with Wastewater Treatment

Ashton's wastewater facilities, including the wastewater treatment plant, provide a necessary service to the residents of Ashton. The residents of Marysville might also benefit in the future from Ashton's central wastewater treatment facilities. Septic systems are suspected contributors to elevated nitrates in the region's groundwater. Ashton's wastewater collection and centralized treatment systems provide improved wastewater treatment over septic systems for the area's residents. The result of this improved treatment is that groundwater quality is likely better than it would be if all of Ashton's residents utilized septic tanks.

The 2005 wastewater facilities planning study anticipated a growth rate of one percent. The design population in the year 2025 was 1,448. The design flow was 200,000 gallons per day. The alternatives identified above have the same design basis. If sewer service were extended to the town of Marysville, the design population would be 1,714 and the design flow would be 226,000 gallons per day.

Prior to construction of the wastewater treatment plant, it is reported that sewage from the city flowed to a small pond at the headwaters of Spring Creek and from the pond with little or no treatment into Spring Creek. The wastewater treatment plant corrected the public health and environmental problems that existed with the discharge of untreated sewage to Spring Creek.

Environmental and Social or Economic Impacts

Although Ashton's wastewater treatment plant discharge is being treated as a new discharge for the purposes of this anti-degradation review, it is in fact a long-established discharge. The proposed limits in the city's draft NPDES permit will require a higher level of treatment than has ever previously been required. Specifically, residual chlorine in the treated effluent will no longer be allowed and ammonia must be nitrified prior to being discharged.

Ashton's wastewater discharge to Sewer Creek, although technically considered a degradation of Sewer Creek, is necessary in order to provide sewer service to the residents of Ashton. The treatment plant in its current configuration is a substantial improvement over past discharge practices in terms of public health and safety and the environment.

There will be no loss of recreation associated with continued discharge from Ashton's wastewater treatment plant. There are no downstream drinking water intakes that could be affected by continued discharge. There is no anticipated adverse impact to fisheries due to continued discharge.

Considering Ashton's discharge is already established and the existing infrastructure has already been funded and constructed, there would be adverse social, economic and environmental impacts if discharge were no longer allowed. The economic impacts of eliminating discharge are illustrated in the reuse alternative outlined above. Eliminating discharge would require significant additional funds which are beyond the capacity of the residents of Ashton to pay.

Continued operation of the city's existing wastewater infrastructure and subsequent degradation of Sewer Creek is necessary maintain the public health, social structure and economic viability of the City of Ashton. It is expected that the treatment and disposal alternatives identified in this report will be developed and evaluated in more detail in a wastewater facilities planning study that is expected to begin in 2013. The focus of the study will be to identify and recommend improvements that will allow the city to meet new ammonia and chlorine discharge limits.