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:

City of Franklin
126 West 2nd South
Franklin, Idaho 83237

Public Comment Start Date: November 29, 2017
Public Comment Expiration Date: December 29, 2017

Technical Contact: Kai Shum
(206) 553-0060
800-424-4372, ext. 0060 (within Alaska, Idaho, Oregon and Washington)
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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
Upon the EPA's request, the Idaho Department of Environmental Quality (IDEQ) has provided a draft certification of the permit for this facility under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Attn: Lynn Van Every
Idaho Department of Environmental Quality
DEQ Pocatello Regional Office
444 Hospital Way, #300

Pocatello, ID 83201
ph: (208) 236-6160
fx: (208) 236-6168
toll-free: (888) 655-6160

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."

US EPA Region 10
Suite 900
1200 Sixth Avenue, OWW-191
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:

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

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
BE	Biological Evaluation
BO or BiOp	Biological Opinion
BOD_5	Biochemical oxygen demand, five-day
BOD_{5u}	Biochemical oxygen demand, ultimate
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
C BOD_5	Carbonaceous Biochemical Oxygen Demand
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

EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FDF	Fundamentally Different Factor
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
MG	Million Gallon
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
N	Nitrogen
NEPA	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
PSNS	Pretreatment Standards for New 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
TP	Total Phosphorus
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
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. Background Information

A. General Information

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

Table 1. General Facility Information

NPDES Permit #:	ID0025569
Applicant:	City of Franklin
Type of Ownership	Municipal
Receiving Water	Cub River
Physical Address:	203 West 2nd South Franklin, Idaho 83237
Mailing Address:	P.O. Box 69 Franklin, Idaho 83237
Facility Contact:	Tami Midzinski City Administrator (208) 646-2300 (208)244-2277 cityadmin@franklinidaho.org
Facility Outfall	42.0167° N, 111.8083° W

B. Permit History

The most recent NPDES permit for the City of Franklin (City) Wastewater Treatment Plant (Facility) was issued on April 6, 2004, became effective on June 1, 2004, and expired on April 30, 2009. An NPDES permit application was submitted by the permittee on December 1, 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. The Facility has also updated its permit application on June 1, 2010, and on June 14, 2016.

II. Facility Information

A. Treatment Plant Description

Service Area

The City owns and operates the Facility located in Franklin, Idaho. The collection system has no combined sewers. The Facility serves a resident population of approximately 906. There are no major industries discharging to the Facility. The Facility is a Publicly Owned Treatment Works (POTW) as defined in 40 CFR 403.3((o)).

Treatment Process

The treatment process consists of a three-celled lagoon treatment system, disinfection using chlorine, and dechlorination. A schematic of the wastewater treatment process and maps showing the location of the treatment Facility and discharge are included in Appendix A.

The Facility discharges to the Cub River under the NPDES permit during the non-growing season, during the months of October – April. During the summer months, from May to September, and the City land applies the treated wastewater.

The City has completed construction upgrades to the Facility, and that upgrades are currently operational. The City has also completed a seepage test of the winter storage lagoon.

Facility upgrades include:

- New intermediate pump station to convey flow from the existing chlorine contact chamber to the new winter storage lagoon.
- New force main from new intermediate pump station to new the winter storage lagoon.
- New 24-million gallon (MG) winter storage lagoon.
- New chlorination equipment and chlorine contact pipe.

In addition, the City has increased its land application site from 28 acres to 87.1 acres. As the upgrades are complete, the facility will likely only need to discharge to the Cub River on a reduced frequency, such as during the month of April, when the 24-MG storage lagoon is full and before the start of the land application season. This may occur during years with high precipitation just before the start of the land application season. At the current annual average daily flow rate of 0.07 mgd, the 24-MG storage lagoon would have sufficient volume to store 342 days of treated wastewater.

The existing permit is for a plant design flow rate of 0.0625 mgd. In the permit application, the City requested that the reissued permit limits be based on an increased design capacity of 0.135 mgd based on the expanded land application site. The City also requested that the permit allow discharge year round with an annual loading limit that would accommodate intermittent discharges from the existing aerated lagoon system. This City requested this to allow taking the winter storage lagoon off-line for maintenance and seepage testing.

EPA disagrees that the increase in land application acreage increases the design flow of the wastewater treatment process for purposes of this NPDES Permit which is for discharge into the river. Therefore, EPA is maintaining the existing permit's design capacity for the next permit cycle of 0.0625 mgd.

Regarding the City's request for year round discharge, EPA has determined that the authorized discharge period should remain the same as the existing permit, retaining the 7-month authorized discharge period from October to April. As discussed later in the Fact Sheet, the NPDES permits must be consistent with the assumptions and requirements of any EPA approved TMDL. Year round discharge from the existing lagoon would be inconsistent with the TMDL. Further, the increase in land application acreage together with the newly constructed 24-MG storage lagoon should provide sufficient flexibility for the Facility to

sufficient time to schedule maintenance and seepage testing as needed during the authorized discharge period.

Outfall Description

According to the permit application, the outfall is 3 feet from shore, and is not equipped with a diffuser. The table below summarizes recent effluent data.

Effluent Characterization

The effluent quality is summarized in Table 2.

Table 2 Effluent Characterization Summary (2006 – 2016)

Parameter	Maximum	Minimum	Effluent Limit
BOD_5 Monthly Average	99 mg/l	2 mg/l	30 mg/l
TSS Monthly Average	121 mg/l	1 mg/l	30 mg/l
pH Instantaneous Max. and Min.	8.91[2]	6.5	Within the range of 6.5 to 9.0 s.u.
Total Residual Chlorine Max. Daily	2.200 mg/l	0.002 mg/l	0.100 mg/l
E. Coli Bacteria (#/100ml) Average Monthly Instantaneous Max	 155 2,405	 1 1	 126 576
Total Ammonia as N Max Daily[3]	26.66 mg/l	3.66 mg/l	None
Total Phosphorus as P Max Daily	7.57 mg/l	2.27 mg/l	None
Footnotes: 1. Source: Facility DMRs from October 2006 to April 2016. 2. April 2006. 3. Ammonia data: Facility DMRs from January 2005 to December 2006.			

Compliance History

The EPA issued a Compliance Order to the City (Docket No. CWA-10-2016-0025) on November 12, 2015. The 2015 Compliance Order on Consent (2015 Order) superseded the previous 2013 Compliance Order on Consent (2013 Order) issued under the EPA Docket Number CWA-10-2013-0011 that was issued on April 22, 2013.

The 2013 Order concluded that the facility had violated permit limits for BOD, TSS, *E.coli*, and TRC. Both the 2013 and 2015 Compliance Orders concluded that the facility had 1,237 violations of the effluent limits in the existing NPDES Permit based on DMRs from

December 2007 to February 2012 (see: Page 3, Paragraph 14 of 2013 Order; and, Page 3, Paragraph 14 of 2015 Order).

The 2013 Order contained specific compliance measures, including that the City use every effort to make available additional lagoon storage capacity of no less than 40 MG by August 31, 2014. The City completed a subsequent engineering study; results showed that a 24-MG lagoon was sufficient (instead of a 40-MG lagoon). The 2015 Order revised the storage capacity, requiring the City to design and install a 24-MG capacity storage lagoon by October 31, 2017.

III. Receiving Water

In drafting permit conditions, EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided later in this Fact Sheet. This section summarizes characteristics of the receiving that impact that analysis.

A. Receiving Water

This Facility discharges to the Cub River in the City of Franklin, Idaho. The Cub River flows to the Bear River which flows into Utah approximately 2-miles downstream from the Facility. The Cub River eventually flows into the Great Salt Lake in Utah.

B. Designated Beneficial Uses

This Facility discharges to the Cub River in the Middle Bear Subbasin (HUC 16010202), Water Body Unit B-2. At the point of discharge, the Cub River is protected for the following designated uses (IDAPA 58.01.02.160.03):

- cold water aquatic life
- secondary contact recreation

In addition, Water Quality Standards (WQS) 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.

C. Water Quality

The water quality for the receiving water is summarized in Table 3. The data are provided for two discharge periods. No data are provided during the period of May through September, because the Facility does not discharge during that period. See Appendix B for individual results.

Table 3. Receiving Water Quality Data

Parameter	Low Flow Season October - February	High Flow Season March - April	Comments
Temperature, °C	12.3	8.8	95th percentile
pH, S.U	7.41	7.72	95th percentile
Ammonia, mg/l	1.13	1.62	90^{th} percentile
Sources: Combined data from Facility surface water data provided by the City and IDEQ (email dated August 3, 2016)			

D. Water Quality Limited Waters

The State of Idaho's 2014 Integrated Report Appendix H (Section 303(d)) lists the Cub River, from Maple Creek to the border, as impaired for Total Phosphorus (TP) and Total Suspended Solids (TSS) (Category 4a: Impaired Waters with EPA Approved TMDLs). The 2014 Integrated Report was approved by EPA on June 5, 2017.

On June 29, 2006, the EPA approved IDEQ's Bear River/Malad River Subbasin Assessment and Total Maximum Daily Load Plan for HUCs 16010102, 16010201, 16010202, 16010204 (2006 TMDL). Table 3-14 of 2006 TMDL included wasteload allocations (WLAs) for TSS for this Facility. IDEQ set the TSS WLA at the existing permitted TSS load for the Facility, with no reduction required.

On September 13, 2013, the EPA approved IDEQ's Revised February 2013, Bear River/Malad Subbasin Assessment and Total Maximum Daily Load (2013 TMDL). Table 13 and Table 26 of the 2013 TMDL included WLAs for Total Phosphorus for the Facility. In setting the Total Phosphorus WLA, the 2013 TMDL acknowledged that data collected downstream of the Facility during normal flow periods met the TP target. Therefore, the WLA was set at present discharge levels during the higher flow months (March and April) in the non-growing season only. During the growing season, when the City has historically land-applied the effluent, the WLA was set based on meeting the 0.05 mg/L TP target at the end of the pipe. Any future growth would need to be accommodated by improvements to the WWTP, with concentration reductions or increased storage for land application to meet TP load allocations.

The TP and TSS WLAs are provided in the table below.

Table 4 Wasteload Allocation for City of Franklin WWTP

Parameter	Daily	Monthly	Annually
TP[1] (May – Feb.)	0.048 lbs/day	1.4 lbs/month	14 lbs/year
TP[1] (March - April)	3.56 lbs/day	106.8 lbs/month	214 lbs/year
TSS[2]	---	---	2,255 kg/yr

Footnote:

1. 2013 TMDL, Tables 13 (page 30) and 26 (page 55).
2. 2006 TMDL, Table 1-3 (page 16).

E. Low Flow Conditions

Critical low flows for the receiving water are summarized below.

Table 5. Critical Flows in the Cub River in cfs

	Annual Crit. Flows	Oct-Feb Seasonal Low Flow	March-April Seasonal High Flow
1Q10	0.70	2.33	11.20
7Q10	1.11	2.39	13.20
30B3/30Q10	1.30	2.42	21.40
Source: USGS Station 10096000 Cub River about Maple Creek near Franklin, Idaho. All available years from 1941 to 1952. Low flows are defined in Appendix C, Part C.			

IV. Effluent Limitations and Monitoring

Table 6 below presents the existing effluent limits and monitoring requirements in the 2006 Permit. Table 7, below, presents the proposed effluent monitoring requirements in the draft permit.

Table 6. Existing Permit - Effluent Limits and Monitoring Requirements

Discharge authorized only from October to April from Outfall 001

Parameter	Effluent Limitations				Monitoring Requirements		
	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Instantaneous Maximum Limit	Sample Location	Sample Frequency	Sample Type
Flow, mgd	---	---	---	---	Effluent	5/week (Mon - Fri)	measured
Biochemical Oxygen Demand (BOD_5)	30 mg/l	45 mg/l	---	---	Influent and Effluent	1/month	grab
	16 lbs/day	23 lbs/day	---	---			
Total Suspended Solids (TSS)	30 mg/l	45 mg/l	---	---	Influent and Effluent	1/month	grab
	16 lbs/day	23 lbs/day	---	---			
E. Coli Bacteria[1,2]	126/100 ml	---	---	576/100 ml	Effluent	5/month	grab
Total Residual Chlorine[2,3,4]	0.05 mg/L	---	0.1 mg/L	---	Effluent	1/week	grab
	0.03 lbs/day	---	0.07 lbs/day				
Total Phosphorus as P, mg/L[5]	---	---	—	—	Effluent	1/month	grab
Total Ammonia as N, mg/L[5]	---	—	—	—	Effluent	1/month	grab

1. 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 3-5 days within a calendar month. See Part I.G. for definition of geometric mean.
2. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See Part II.G.
3. The average monthly concentration limit for chlorine is not quantifiable using EPA approved test methods. The permittee will be in compliance with the average monthly effluent limit for chlorine provided the average monthly total chlorine residual level is at or below the compliance evaluation level of 0.1 mg/L, with a average monthly loading at or below 0.05 lbs/day.
4. Chlorine effluent limits shall become effective September 30, 2006 in accordance with the conditions of the Compliance Schedule in Part I.B., below.
5. Monitoring shall be conducted once per month starting in 2005 and lasting until a minimum of 10 samples has been collected during the permit cycle.

In addition to the above table, the 2006 permit required a minimum of 85% removal for BOD_5 and TSS, limited the pH range to between 6.5 and 9.0 standard units, and required pH monitoring at least once a week.

Table 7. Draft Permit - Effluent Limits and Monitoring Requirements

Discharge authorized only from October 1 to April 30 from Outfall 001

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Parameters With Effluent Limits							
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	--	Influent and Effluent	1/week	Grab
	lbs/day	16	23	--			Calculation[1]
BOD_5 Percent Removal	%	85 (minimum)	--	--	--	1/month	Calculation[2]
Total Suspended Solids (TSS)	mg/L	30	45	--	Influent and Effluent	1/week	Grab
	lbs/day	16	23	--			Calculation[1]
	lbs/day	Annual Average = 13.61 lbs/day					Calculation[3]
TSS Percent Removal	%	85 (minimum)	--	--	--	1/month	Calculation[2]
E. coli [4]	CFU/ 100 ml	126	--	576 (instant. max) [5]	Effluent	5/month	Grab
Total Residual Chlorine	µg /L	50	--	100[5]	Effluent	1/week	Grab
	lbs/day	0.03	--	0.07[5]			Calculation[1]
pH	std units	Between 6.5 – 9.0			Effluent	1/week	Grab
Total Ammonia (as N) October 1 - February 28/29	mg /L	25.32	--	60.57[5]	Effluent	1/week	Grab
	lbs/day	13.20		31.57			Calculation[1]
Total Phosphorus (as P) October 1 – February 28/29	mg/l	Report	Report	---	Effluent	1/week	Grab
	lbs/day	0.07	0.14	---			Calculation[3]
		Seasonal Average = 0.05 lbs/day					
Total Phosphorus (as P) March 1 – April 30	mg/l	Report	Report	---	Effluent	1/week	Grab
	lbs/day	5.52	11.10	---			Calculation[3]
		Seasonal Average = 3.56 lbs/day					
Floating, Suspended, or Submerged Matter	--	See permit's narrative description.				1/month	Visual Observation
		Report Parameters					
Flow	mgd	Report	--	Report	Effluent	1/day (Monday to Friday)	Measurement
Total Ammonia (as N) March 1 and April 30	mg/l	Report	--	Report	Effluent	1/week	Grab
	lbs/day						Calculation[1]

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Temperature	ºC	--	Report	Report	Effluent	1/week	Grab

Notes
1. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Percent Removal. 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 using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
3. See Paragraph I.B.2. of permit regarding average annual limit.
4. The average monthly *E. coli* bacteria counts must not exceed a geometric mean of 126/100 ml based on a minimum of five samples taken every 3 - 7 days within a calendar month. See Part VI of permit for a definition of geometric mean.
5. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See Paragraph I.B.5 and Part III.G of permit.

Differences in Effluent Limit Requirements

1. TSS: Annual loading limits have been added to be consistent with the TMDL.
2. TP: Maximum monthly, maximum weekly, and maximum seasonal limits have been added to be consistent with the TMDL.
3. Total Ammonia: For October to February, Maximum Daily and Average Monthly limits have been added to meet Idaho WQS.

V. Basis for Effluent Limits

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 WQS applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

A. Pollutants of Concern

The EPA identifies pollutants of concern for the discharge based on those which:

- Have a technology-based limit
- Have an assigned WLA from a TMDL
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring. Monitoring data are reported in the application and discharge monitoring report and any special studies
- Are expected to be in the discharge based on the nature of the discharge

The wastewater treatment process for this facility includes both primary and secondary treatment, as well as disinfection with chlorination. Pollutants expected in the discharge from a facility with this type of treatment, include but are not limited to: five-day biochemical

oxygen demand (BOD_5), total suspended solids (TSS), E. coli bacteria, total residual chlorine (TRC), pH, ammonia, temperature, phosphorus, and dissolved oxygen (DO).
Based on this analysis, pollutants of concern are as follows:

- BOD_5
- DO
- TSS
- E. coli bacteria
- TRC
- pH
- Temperature
- Ammonia
- Phosphorus

B. 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 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 certain municipal WWTPs and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table 8. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the Permit Writers Manual.

Table 8. Secondary Treatment Effluent Limits

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.	
Source: 40 CFR 133.102		

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, except under certain conditions. 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]

Since the design flow for this Facility is 0.0625 mgd, the technology based mass limits for BOD_5, and TSS, are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.0625 mgd × 8.34 = 16 lbs/day

Average Weekly Limit = 45 mg/L × 0.0625 mgd × 8.34 = 23 lbs/day

The concentration and removal rate limits for BOD_5 and TSS are the technology-based effluent limits of 40 CFR 133.102.

C. 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 WQS. 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. 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. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (40 CFR 122.4(d), 122.44(d)(4), see also CWA Section 401(a)(2)). In consideration of several factors, including, the considerable distance to the Utah border, the discharge being small, intermittent, and seasonal, EPA concludes that the discharge will not affect the quality of waters downstream in the State of Utah.

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 WQS are met, and must be consistent with any available wasteload allocation for the discharge in an approved TMDL. If there are no approved TMDLs that specify wasteload allocations for this discharge; all of the water quality-based effluent limits are calculated directly from the applicable WQS.

Reasonable Potential Analysis and Need for Water Quality Based Effluent Limits

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (*TSD*) 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

[1] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit.

In some cases, a dilution allowance or mixing zone is permitted. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and within which certain water quality criteria can be exceeded (EPA, 2014). While the criteria may be exceeded within the mixing zone, the use and size of the mixing zone must be limited such that the waterbody as a whole will not be impaired, all designated uses are maintained and acutely toxic conditions are prevented

The Idaho WQS at IDAPA 58.01.02.060 provides Idaho's mixing zone policy for point source discharges. In the draft State 401 Certification, the IDEQ proposes to authorize mixing zones. The proposed mixing zones are summarized in Table 9. The EPA calculated dilution factors for seasonal critical low flow conditions. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 0.0625 mgd.

Table 9. Mixing zones

Criteria Type	Season	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Aquatic Life - Acute	Oct - Feb	2.33	25%	7.0
Aquatic Life - Acute	March - April	11.20	25%	30.0
Aquatic Life - Chronic	Oct - Feb	2.39	25%	7.2
Aquatic Life - Chronic	March - April	13.20	25%	35.1

The reasonable potential analysis and water quality based effluent limit calculations were based on mixing zones shown in Table 9. If IDEQ revises the allowable mixing zone in its final certification of this permit, reasonable potential analysis and water quality based effluent limit calculations will be revised accordingly.

The equations used to conduct the reasonable potential analysis and calculate the water quality based effluent limits are provided in Appendix D.

Reasonable Potential and Water Quality Based Effluent Limits

The reasonable potential and water quality based effluent limit for specific parameters are summarized below. The calculations are provided in Appendix D.

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.

Table 10 Ammonia Criteria

Total ammonia nitrogen criteria (mg N/L):
Seasonal Basis - LOW Flow
Based on IDAPA 58.01.02

INPUT	
1. Receiving Water Temperature (deg C):	12.3
2. Receiving Water pH:	7.41
3. Is the receiving water a cold water designated us	Yes
4. Are non-salmonid early life stages present or abse	Present
OUTPUT	
Total ammonia nitrogen criteria (mg N/L):	
Acute Criterion (CMC)	**15.13**
Chronic Criterion (CCC)	**4.70**

Acute Criteria Equation: Cold Water $CMC = \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$

Acute Criteria Equation: Warm Water $CMC = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$

Chronic Criteria: Cold Water, Early Life Stages Present $CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet MIN(2.85, 1.45 \cdot 10^{0.028(25-T)})$

Chronic Criteria: Cold Water, Early Life Stages Absent $CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet 1.45 \cdot 10^{0.028(25-T)}$

Total ammonia nitrogen criteria (mg N/L):
Seasonal Basis - HIGH Flow
Based on IDAPA 58.01.02

INPUT	
1. Receiving Water Temperature (deg C):	8.9
2. Receiving Water pH:	7.72
3. Is the receiving water a cold water designated us	Yes
4. Are non-salmonid early life stages present or abse	Present
OUTPUT	
Total ammonia nitrogen criteria (mg N/L):	
Acute Criterion (CMC)	**9.32**
Chronic Criterion (CCC)	**3.50**

Acute Criteria Equation: Cold Water $CMC = \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$

Acute Criteria Equation: Warm Water $CMC = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$

Chronic Criteria: Cold Water, Early Life Stages Present $CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet MIN(2.85, 1.45 \cdot 10^{0.028(25-T)})$

Chronic Criteria: Cold Water, Early Life Stages Absent $CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet 1.45 \cdot 10^{0.028(25-T)}$

A reasonable potential calculation showed that the Facility's discharge would have the reasonable potential to cause or contribute to a violation of the water quality criteria for the Low Flow Season (October to February), but does not have reasonable potential to violate water quality criteria during the High Flow Season (March – April). Accordingly, there are effluent limits for ammonia during the Low Flow Season, and no effluent limits for ammonia during the High Flow Season. As shown in Appendix D, the effluent limits are:

Total Ammonia (October – February, Low Flow discharge period)

AML = 25.32 mg/l; and, 13.20 lbs/day.

MDL = 60.57 mg/l; and, 31.57 lbs/day.

The draft permit requires that the permittee conduct monitoring for ammonia during the 7-month discharge period (both the Low Flow Period and High Flow Period) from October to April. In addition, the permittee must conduct monitoring for ammonia in the receiving water, together with pH and temperature for analysis of the applicable ammonia criteria for the next permit reissuance.

pH

The Idaho WQS 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 compared to the water quality criteria. 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.

Dissolved Oxygen and BOD_5

Natural decomposition of organic material in wastewater effluent impacts dissolved oxygen in the receiving water at distances far outside of the regulated mixing zone. The BOD5 of an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water.

The reasonable potential to cause or contribute to violations of the dissolved oxygen criteria of 6 mg/L can be evaluated using the Streeter-Phelps model. The Streeter-Phelps equation (also known as the "dissolved oxygen sag" equation) is based on a mass balance which is affected by two processes. One is that oxygen is removed from water by the degradation of organic materials. In other words, the biochemical oxygen demand of an organic waste is satisfied by oxygen taken from the water. The second process is "reaeration" by oxygen transfer into the water from the atmosphere.

The worst case scenario was evaluated using the model. The analysis was done using the worst case effluent of the facility during the Low Flow Season from October to February. Due to the lack of data of effluent temperature, the effluent temperature was estimated as the 95^{th} percentile of the receiving water temperature (12.31°C). Using site-specific and default values, the model shows that the downstream DO will read a low value of 7.61 mg/L, which is still significantly higher than the oxygen criteria of 6 mg/l. Therefore, the Facility is unlikely to contribute to a violation of the oxygen criteria.

Streeter-Phelps Analysis of Critical Dissolved Oxygen Sag

INPUT			
1. EFFLUENT CHARACTERISTICS			
Discharge (cfs):			0.096688
CBOD5 (mg/L):			25
NBOD (mg/L):			2.6
Dissolved Oxygen (mg/L):			2
Temperature (deg C):			12.31
2. RECEIVING WATER CHARACTERISTICS			
Upstream Discharge (cfs):			2.39
Upstream CBOD5 (mg/L):			1.5
Upstream NBOD (mg/L):			0.2
Upstream Dissolved Oxygen (mg/L):			8.32
Upstream Temperature (deg C):			12.31
Elevation (ft NGVD):			4501
Downstream Average Channel Slope (ft/ft):			0.00088
Downstream Average Channel Depth (ft):			4
Downstream Average Channel Velocity (fps):			1
3. REAERATION RATE (Base e) at 20 deg C (day^-1):			3.57
Reference	Applic. Vel (fps)	Applic. Dep (ft)	Suggested Values
Churchill	1.5 - 6	2 - 50	1.14
O'Connor and Dobbins	0.1 - 1.5	2 - 50	1.62
Owens	0.1 - 6	1 - 2	1.66
Tsivoglou-Wallace	0.1 - 6	0.1 - 2	6.08
4. BOD DECAY RATE (Base e) AT 20 deg C (day^-1):			2.51
(Suggested value = 2.51, *Wright and McDonnell, 1979*)			

OUTPUT	
1. INITIAL MIXED RIVER CONDITION	
CBOD5 (mg/L):	2.4
NBOD (mg/L):	0.3
Dissolved Oxygen (mg/L):	8.1
Temperature (deg C):	12.3
2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e)	
Reaeration (day^-1):	2.97
BOD Decay (day^-1):	1.76
3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU	
Initial Mixed CBODU (mg/L):	3.5
Initial Mixed Total BODU (CBODU + NBOD, mg/L):	3.8
4. INITIAL DISSOLVED OXYGEN DEFICIT	
Saturation Dissolved Oxygen (mg/L):	8.990
Initial Deficit (mg/L):	0.92
5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days):	0.28
6. DISTANCE TO CRITICAL DO CONCENTRATION (miles):	4.65
7. CRITICAL DO DEFICIT (mg/L):	1.38
8. CRITICAL DO CONCENTRATION (mg/L):	**7.61**

E. coli

The Idaho WQS 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 WQS 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 WQS. For waters designated for secondary contact recreation, the "single sample maximum" value is 576 organisms per 100 ml (IDAPA 58.01.02.251.01.b.i.).

The goal of a water quality-based effluent limit is to ensure a low probability that WQS 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 576 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 576 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 WQS 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.

Chlorine

The Idaho WQS at IDAPA 58.01.02.210 establish an acute criterion of 19 µg /L, and a chronic criterion of 11 µg/L for the protection of aquatic life. EPA conducted a reasonable potential analysis for two seasons. A reasonable potential calculation showed that the discharge from the Facility would have the reasonable potential to cause or contribute to a violation of the water quality criteria for chlorine for the October to February Low Flow Season.

The calculated limitations are as follows:

AML = 0.067 mg/l; and, 0.035 lbs/day.

MDL = 0.123 mg/l; and, 0.064 lbs/day.

From April to March, there is No Reasonable Potential to exceed WQS, and therefore, no effluent limit is necessary based on the calculation. However, EPA will retain the existing effluent limits from the Facility's existing permit per anti-backsliding provisions.

The Clean Water Act and federal regulations generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. See discussion of additional discussion on anti-backsliding below in Section V.D. Because of anti-backsliding anti-backsliding regulations, EPA is retaining the existing chlorine effluent limits for both the low flow season and the high flow season, so that all effluent limits are as stringent as the existing permit during the entire discharge period from October to April. These limits are:

Average Monthly Limit (AML) = 0.05 mg/l; and, 0.03 lbs/day.

Maximum Daily Limit (MDL) = 0.10 mg/l; and, 0.07 lbs/day.

Residues

The Idaho WQS 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.

Total Suspended Solids (TSS)

The 2006 TMDL assigned a WLA of 2,255 kg/year (equivalent to 13.61 lbs/day) to the Facility (See Table 1-3 (page 16)). The WLA was applied in the draft permit as an Annual Average loading limit of 13.61 lbs/day.

In addition, the NPDES regulations require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable (40 CFR 122.45(d)(2)). EPA calculated average monthly and average weekly limits for TSS based on assigning the WLA as the Long Term Average in the permit limit statistical calculations. Because those limits are less stringent the technology-based average monthly and average weekly limits, the draft permit retains the technology-based average monthly and average weekly concentration and loading limits.

Total Phosphorus

IDEQ's 2013 TMDL assigns the following WLAs for TP to this Facility:

Season	Daily	Monthly	Annually
May – February	0.048 lbs/day	1.4 lbs/month	14 lbs/year
March - April	3.56 lbs/day	106.8 lbs/month	214 lbs/year

Page 29 of the 2013 TMDL, expresses how the WLA should be interpreted: "Wasteload allocations are annual averages, unless allocations vary during the year, in which case the wasteload allocations are averages for the seasonal periods specified by the allocations. NPDES permit limits based on the WLAs should be expressed in the permits in a manner consistent with these averaging periods."

The NPDES regulations require that NPDES permits include effluent limits consistent with the assumptions and requirements of any WLA assigned to the discharge as part of an approved TMDL (See 40 CFR122.44(d)(1)(vii)(B)).

To be consistent with the averaging period, the permit includes the WLA as a seasonal average. In addition, the NPDES regulations require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable (40 CFR 122.45(d)(2)). Therefore, EPA calculated average monthly and average weekly limits for TP based on the assumption that the WLA represents the Long Term Average.

D. Antibacksliding

Section 402(o) of the Clean Water Act and federal regulations at 40 CFR §122.44 (l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to Chapter 7 of the Permit Writers Manual *Final Effluent Limitations and Anti-backsliding*.

An anti-backsliding analysis was done for the Facility. All effluent limits are as stringent or more stringent than the existing permit. In implementing the WLAs of the TMDL, there are new effluent limits for Total Suspended Solids, and TP that were not in the existing permit. Accordingly, the draft permit meets Antibacksliding provisions.

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 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.

Monitoring Changes from the Previous Permit

1. Total Ammonia and TP: monitoring frequency has been changed from monthly to weekly.
2. Floating and Suspended or Submerged Matter: visual monitoring added monthly frequency.
3. Temperature: weekly grab monitoring added.

C. Surface Water Monitoring

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body. Table 11 presents the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR.

Table 11. Surface Water Monitoring in Draft Permit

Parameter	Units	Upstream Sampling Frequency
Temperature	°C	See Footnotes 1 & 3
pH	Standard Units	See Footnotes 1 & 3
Total Ammonia as N	mg/L	See Footnotes 1 & 3

Footnote:

1. Surface water monitoring shall be conducted once during each of the following 4 monitoring periods: October – November; December – February; March; and, April.
2. One monitoring station shall be established in Cub River at above the influence of the Facility's discharge, and must be approved by IDEQ.
3. Surface water samples shall be grab samples.
4. Surface water monitoring shall continue for the duration of the permit.
5. When discharge occurs, surface water monitoring shall take place on the same day as effluent monitoring.
6. Surface water monitoring need not be conducted when there is no discharge during the particular sampling period(s) identified on Footnote (1), above.

Differences Between Proposed and Existing Surface Water Monitoring Requirements

1. Monitoring periods have changed to October – November; December – February, March, and April. However, the number of sampling periods remains 4 times per year. The new sampling periods require monitoring to be conducted two times during the low flow season (October to February), and two times in the high flow season (March and April). This will enable a minimum of 10 samples to be collected for each parameter during the 5-year permit cycle for both the low flow and high flow seasons.

2. Duration of monitoring has changed from 4 years, to the duration of the permit life (i.e., 5-years permit life; or longer than 5-years if permit is administratively continued).
3. Surface water monitoring is no longer required in the draft permit when there is no discharge during the particular sampling period(s).

D. Electronic Submission of Discharge Monitoring Reports

The draft permit requires that the permittee submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application.

The EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: https://netdmr.com. The permittee may use NetDMR after requesting and receiving permission from EPA Region 10.

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. Compliance Schedules

Compliance schedules are authorized by federal NPDES regulations at 400 CFR 122.47 and Idaho WQS at IDAPA 58.01.02.400.03. Compliance schedules 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. The EPA has found that a compliance schedule is not appropriate because the facility will be able to meet the new effluent limits for TSS, TP, and Total Ammonia upon the effective date of the permit.

TSS: The draft permit includes a new mass-based annual average effluent limit for TSS of 13.61 lbs/day based on the TMDL. The facility should be able to meet this new effluent limit upon the effective date of the permit because the facility is an intermittent discharger with the ability to land apply wastewater during the growing season from May to September. In conjunction with land application during the growing season, the facility will have a 24-MG storage lagoon, which will allow the facility to store approximately 342 days of wastewater generated. Therefore, the facility should have the ability to hold its discharge until the land application season. In the event the facility does discharge during the non-growing season, the permittee should have the ability to control discharge to meet the mass-based limit.

TP: The draft permit includes new TP effluent limits based on the TMDL. The facility should be able to meet the new effluent limits upon the effective date of the permit. The 24-MG storage lagoon should allow the facility to hold its discharge when the more stringent TP limit applies (October 1 through the last day in February). The TP limit for March and April was set equal to the existing discharge level, with no reduction required.

Total Ammonia: The draft permit includes new water quality-based effluent limits for Total Ammonia for the period from October 1 to the last day in February. A review of the effluent data shows that the facility should be able to meet the new effluent limits upon the effective date of the permit. During the last permit cycle, only one sample would have exceeded the draft AML, and all samples would have been below the draft MDL.

B. Quality Assurance Plan

The permittee is required to update the Quality Assurance Plan within 180 days of the effective date of the final permit. The Quality Assurance Plan must include of standard operating procedures the permittee must 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.

C. Operation and Maintenance Plan

The permittee is required 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.

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

SSOs are not authorized under this permit. 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.

The permittee may refer to the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by the EPA inspectors to evaluate a collection system's management, operation and maintenance program activities. Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

E. Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* directs each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities." EPA is striving to enhance the ability of overburdened communities to participate fully and meaningfully in the permitting process for EPA-issued permits, including NPDES permits. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. As part of an agency-wide effort, EPA Region 10 will consider prioritizing enhanced public involvement opportunities for EPA-issued permits that may involve activities with significant public health or environmental impacts on already overburdened communities. For more information, please visit http://www.epa.gov/compliance/ej/plan-ej/.

As part of the permit development process, EPA Region 10 conducted an "EJSCREEN" to determine whether a permit action could affect overburdened communities. EJSCREEN is a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the census block group level. As a pre-decisional tool, EJSCREEN is used to highlight permit candidates for additional review where enhanced outreach may be warranted. The EPA also encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways To Engage Neighboring Communities (see https://www.federalregister.gov/articles/2013/05/09/2013-10945/epa-activities-to-promote-environmental-justice-in-the-permit-application-process#h-13).

Examples of promising practices include: thinking ahead about community's characteristics and the effects of the permit on the community, engaging the right community leaders, providing progress or status reports, inviting members of the community for tours of the facility, providing informational materials translated into different languages, setting up a hotline for community members to voice concerns or request information, follow up, etc.

EPA's EJSCREEN tool identified the area in the vicinity of the Facility is a potentially overburdened community. During the screening process, EPA considered specific case-by-case circumstances, and EPA concluded that there is no indication that the issuance of this permit would trigger significant environmental justice concerns

For more information, please visit http://www.epa.gov/compliance/ej/plan-ej/ and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

F. Pretreatment Requirements

Idaho does not have an approved state pretreatment program per 40 CFR 403.10, thus, EPA is the Approval Authority for Idaho POTWs. Since the Facility does not have an approved POTW pretreatment program per 40 CFR 403.8, the EPA is also the Control Authority of industrial users that might introduce pollutants into the City of Franklin Wastewater Treatment Plant.

Special Condition Part II.D of the permit reminds the Permittee that it cannot authorize discharges which may violate the national specific prohibitions of the General Pretreatment Program.

Although, not a permit requirement, the Permittee may wish to consider developing the legal authority enforceable in Federal, State or local courts which authorizes or enables the POTW to apply and to enforce the requirement of sections 307 (b) and (c) and 402(b)(8) of the Clean Water Act, as described in 40 CFR 403.8(f)(1). Where the POTW is a municipality, legal authority is typically through a sewer use ordinance, which is usually part of the city or county code. The EPA has a Model Pretreatment Ordinance for use by municipalities operating POTWs that are required to develop pretreatment programs to regulate industrial discharges to their systems (EPA, 2007). The model ordinance should also be useful for communities with POTWs that are not required to implement a pretreatment program in drafting local ordinances to control nondomestic dischargers within their jurisdictions.

Background on the pretreatment program may be found at Introduction to the National Pretreatment Program (EPA, 2011).

Standard Permit Provisions

Sections III, IV and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. 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. In Franklin County where the Facility is located, there are no Endangered or Threatened Listed Species identified by NOAA Fisheries; and, the USFWS listed one terrestrial species (Canada Lynx - Threatened) that would not be affected by the discharge. Accordingly, the review of the threatened and endangered species located in Franklin County, Idaho, finds that there is NO EFFECT to listed species.

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 indicates that there is no effect.

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.

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. A copy of the draft 401 certification is provided in Appendix E.

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.

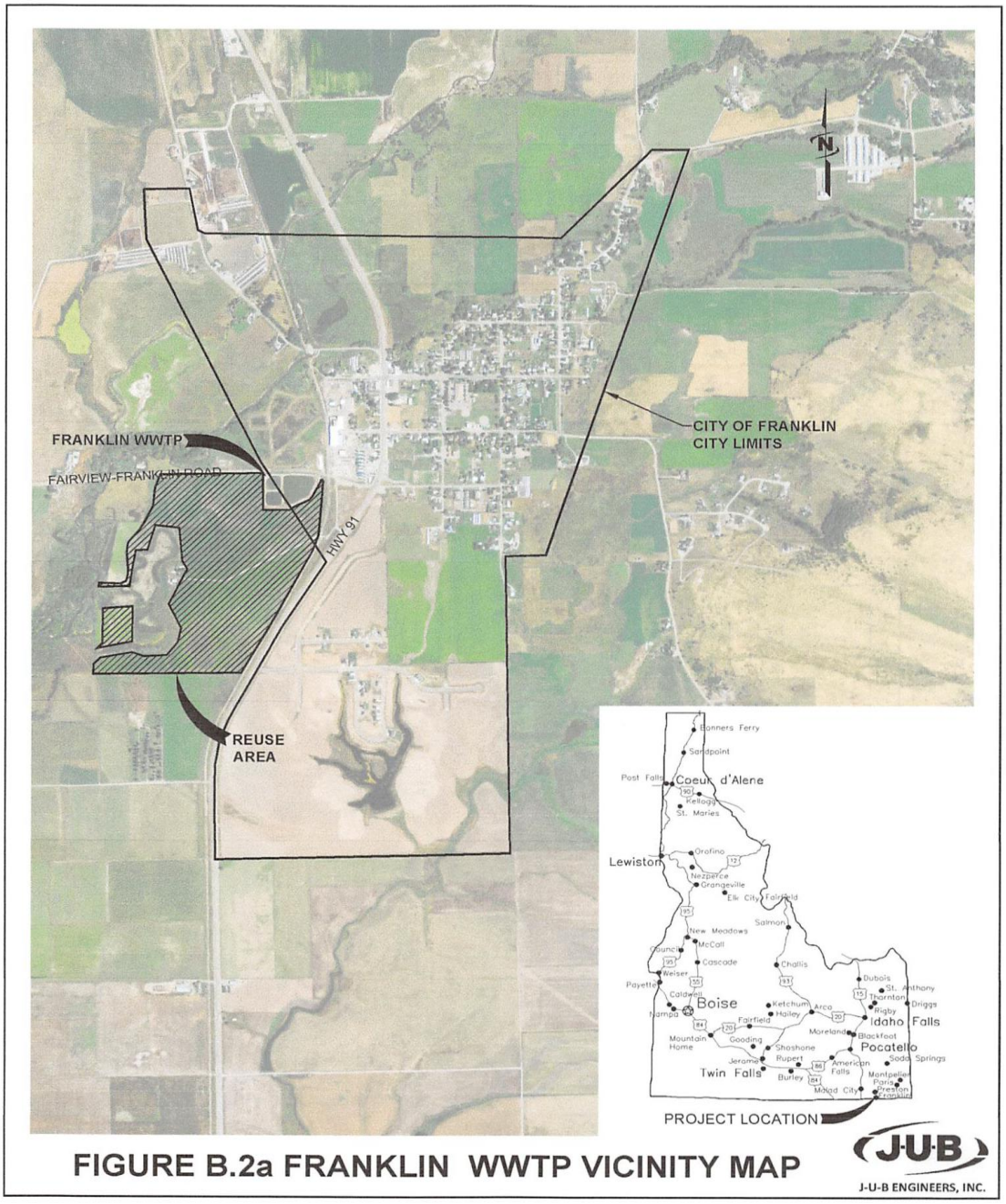
Water Pollution Control Federation. Subcommittee on Chlorination of Wastewater. *Chlorination of Wastewater.* Water Pollution Control Federation. Washington, D.C. 1976.

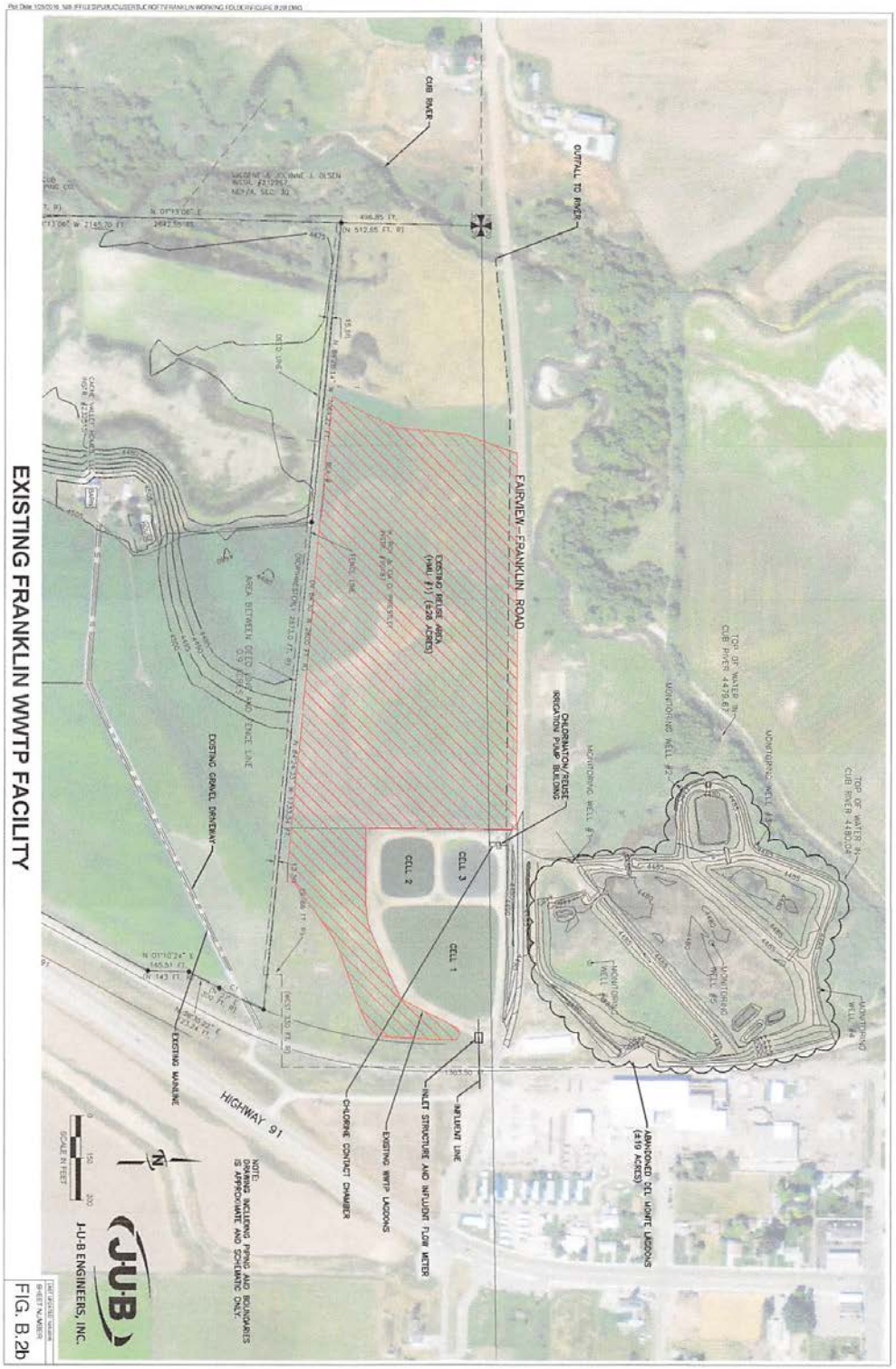
EPA. 2010. *NPDES Permit Writers' Manual.* Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

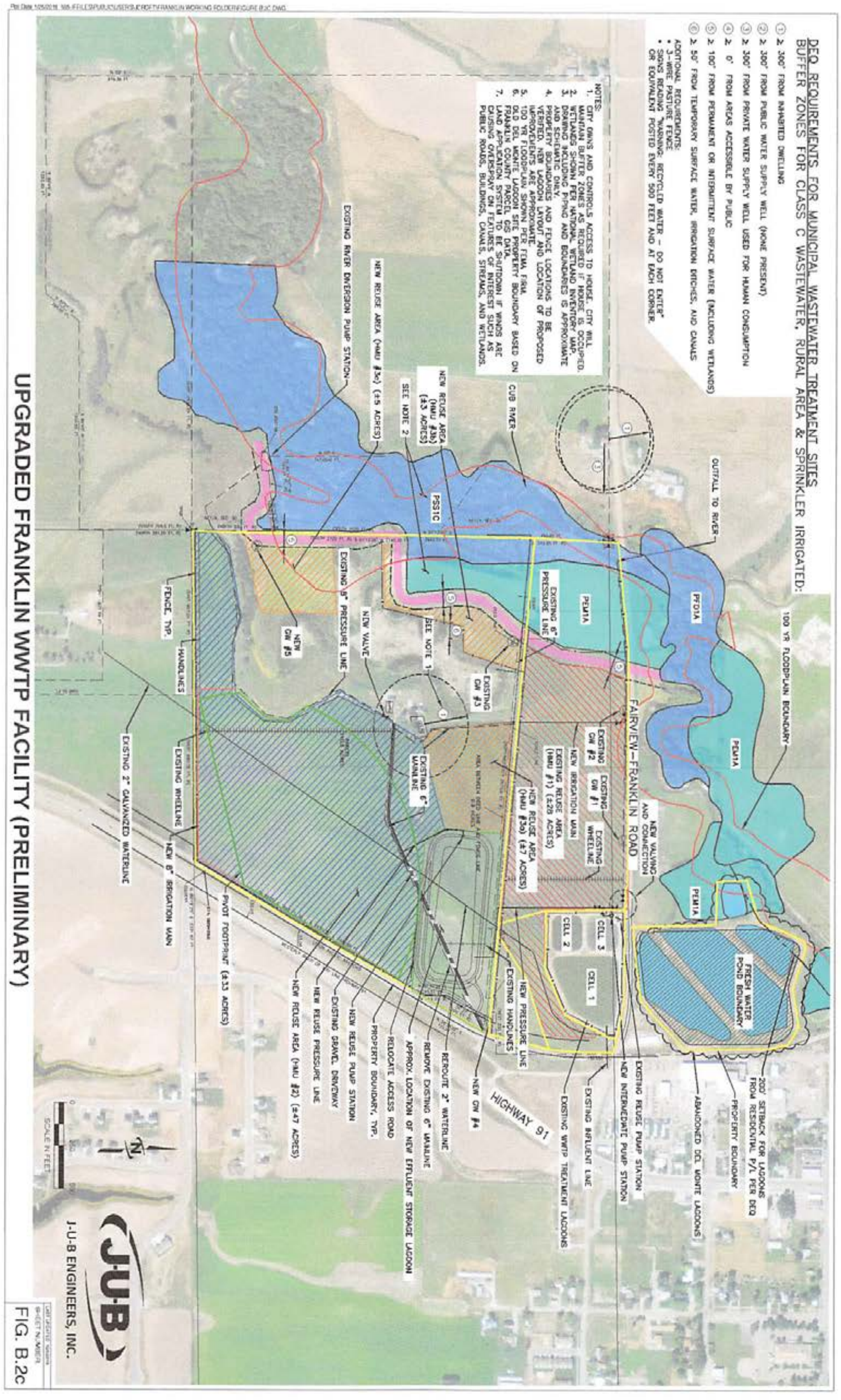
EPA, 2007. *EPA Model Pretreatment Ordinance*, Office of Wastewater Management/Permits Division, January 2007.

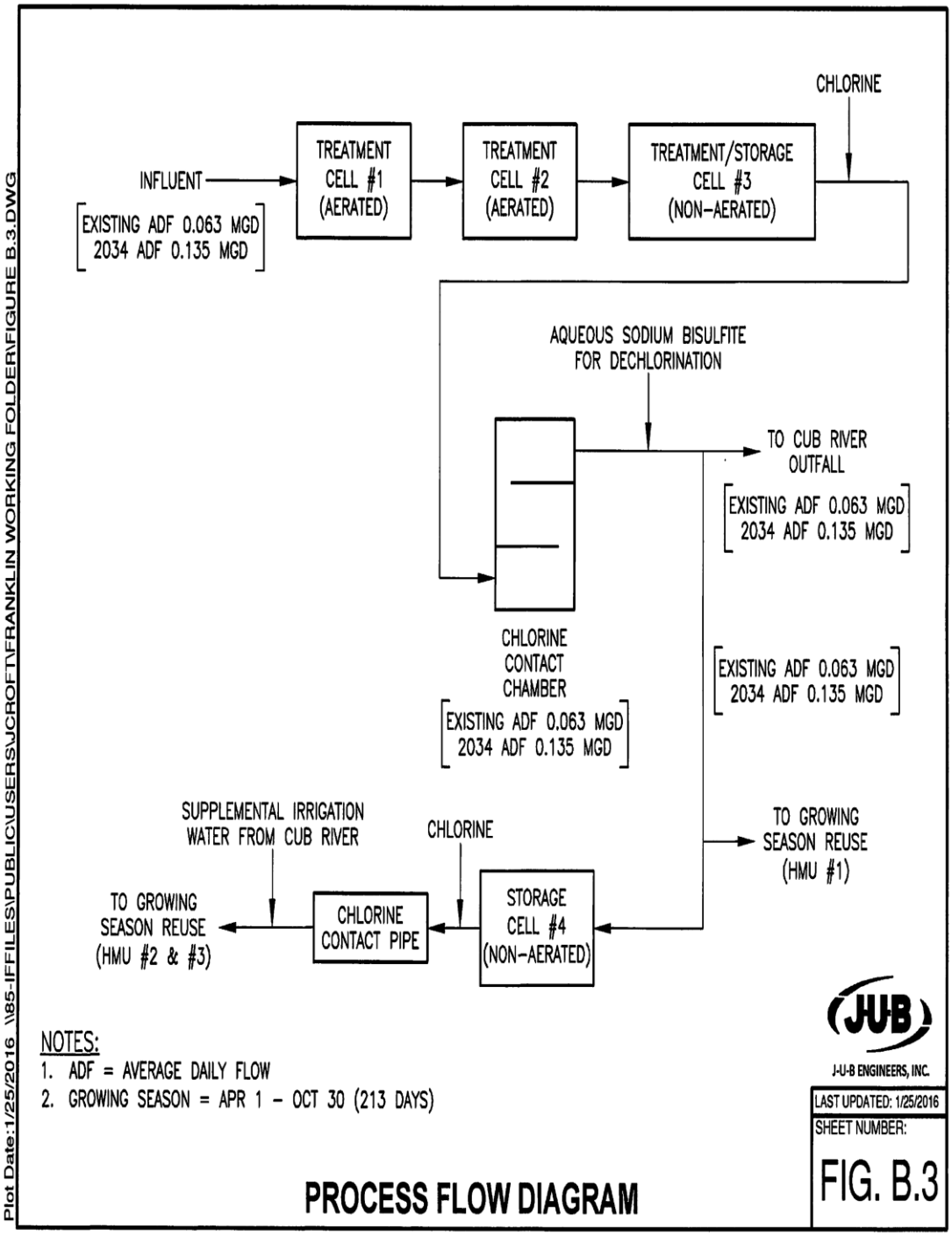
EPA, 2011. *Introduction to the National Pretreatment Program*, Office of Wastewater Management, EPA 833-B-11-011, June 2011.

Appendix A. Facility Information




EXISTING FRANKLIN WWTP FACILITY
FAIRVIEW - FRANKLIN ROAD
HIGHWAY 91
CUB RIVER
OUTFALL TO RIVER
EXISTING REUSE AREA (HWL #1) (5.28 ACRES)
CELL 1
CELL 2
CELL 3
CHLORINATION/REUSE IRRIGATION PUMP BUILDING
CHLORINE CONTACT CHAMBER
EXISTING WWTP LAGOONS
INLET STRUCTURE AND INFLUENT FLOW METER
INFLUENT LINE
ABANDONED SEL MONTE LAGOONS (4.19 ACRES)
EXISTING GRAVEL DRIVEWAY
EXISTING MAINLINE
MONITORING WELL #1
MONITORING WELL #2
MONITORING WELL #3
MONITORING WELL #4
MONITORING WELL #5
TOP OF WATER IN CUB RIVER 4480.04
TOP OF WATER IN CUB RIVER 4479.67
NOTE: DRAWING INCLUDING PIPING AND BOUNDARIES IS APPROXIMATE AND SCHEMATIC ONLY.
SCALE IN FEET
J-U-B ENGINEERS, INC.
FIG. B.2b


DEQ REQUIREMENTS FOR MUNICIPAL WASTEWATER TREATMENT SITES
BUFFER ZONES FOR CLASS C WASTEWATER, RURAL AREA & SPRINKLER IRRIGATED:
FAIRVIEW-FRANKLIN ROAD
HIGHWAY 91
UPGRADED FRANKLIN WWTP FACILITY (PRELIMINARY)
J-U-B ENGINEERS, INC.
FIG. B.2c


Plot Date:1/25/2016 \\85-IFFILES\PUBLIC\USERS\JCROFT\FRANKLIN WORKING FOLDER\FIGURE B.3.DWG
INFLUENT
EXISTING ADF 0.063 MGD
2034 ADF 0.135 MGD
TREATMENT CELL #1 (AERATED)
TREATMENT CELL #2 (AERATED)
TREATMENT/STORAGE CELL #3 (NON-AERATED)
CHLORINE
AQUEOUS SODIUM BISULFITE FOR DECHLORINATION
TO CUB RIVER OUTFALL
EXISTING ADF 0.063 MGD
2034 ADF 0.135 MGD
CHLORINE CONTACT CHAMBER
EXISTING ADF 0.063 MGD
2034 ADF 0.135 MGD
EXISTING ADF 0.063 MGD
2034 ADF 0.135 MGD
TO GROWING SEASON REUSE (HMU #1)
SUPPLEMENTAL IRRIGATION WATER FROM CUB RIVER
CHLORINE
TO GROWING SEASON REUSE (HMU #2 & #3)
CHLORINE CONTACT PIPE
STORAGE CELL #4 (NON-AERATED)
NOTES:
1. ADF = AVERAGE DAILY FLOW
2. GROWING SEASON = APR 1 - OCT 30 (213 DAYS)
J-U-B ENGINEERS, INC.
LAST UPDATED: 1/25/2016
SHEET NUMBER:
FIG. B.3
PROCESS FLOW DIAGRAM

Appendix B. Water Quality Data

A. Treatment Plant Effluent Data

Total Ammonia

Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		16.33	mg/l	1/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		16	mg/l	2/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		26.66	mg/l	3/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		12.33	mg/l	4/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		3.66	mg/l	10/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		10	mg/l	11/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		7	mg/l	12/1/2005
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		16	mg/l	1/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		20	mg/l	2/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		21.67	mg/l	3/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		10	mg/l	4/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX			mg/l	10/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		5	mg/l	11/1/2006
Nitrogen, ammonia total [;	Effluent Gross	DAILY MX		7.33	mg/l	12/1/2006
			SD	6.934		
			mean	13.229	mg/l	
		CV =	SD/mean	0.524		
			n	13		
			95th %ile	23.666	mg/l	
			Max	26.66	mg/l	
			Min	3.66	mg/l	

Total Residual Chlorine

Chlorine		
.07	mg/L	10/31/2006
.04	mg/L	11/30/2006
.06	mg/L	12/31/2006
.04	mg/L	01/31/2007
.05	mg/L	02/28/2007
.05	mg/L	03/31/2007
	mg/L	04/30/2007
	mg/L	10/31/2007
.25	mg/L	11/30/2007
.08	mg/L	12/31/2007
.06	mg/L	01/31/2008
.08	mg/L	02/29/2008
.05	mg/L	03/31/2008
	mg/L	04/30/2008
	mg/L	11/30/2008
.03	mg/L	12/31/2008
.06	mg/L	01/31/2009
.06	mg/L	02/28/2009
.09	mg/L	03/31/2009
	mg/L	04/30/2009
	mg/L	10/31/2009
	mg/L	11/30/2009
	mg/L	12/31/2009
.05	mg/L	01/31/2010
.02	mg/L	02/28/2010
.04	mg/L	03/31/2010
	mg/L	04/30/2010
	mg/L	10/31/2010
	mg/L	11/30/2010
.05	mg/L	12/31/2010
.06	mg/L	01/31/2011
.08	mg/L	02/28/2011
.07	mg/L	03/31/2011
	mg/L	04/30/2011
	mg/L	10/31/2008
	mg/L	10/31/2011
	mg/L	11/30/2011
	mg/L	12/31/2011
.08	mg/L	01/31/2012
.06	mg/L	02/29/2012
.07	mg/L	03/31/2012
	mg/L	04/30/2012
	mg/L	10/31/2012

.05	mg/L	11/30/2012
.07	mg/L	01/31/2013
.06	mg/L	02/28/2013
.05	mg/L	03/31/2013
	mg/L	04/30/2013
	mg/L	10/31/2013
.08	mg/L	11/30/2013
.06	mg/L	12/31/2013
.07	mg/L	01/31/2014
.07	mg/L	02/28/2014
.07	mg/L	03/31/2014
.06	mg/L	04/30/2014
.05	mg/L	10/31/2014
.05	mg/L	11/30/2014
.05	mg/L	12/31/2014
.05	mg/L	01/31/2015
.05	mg/L	02/28/2015
.05	mg/L	03/31/2015
.07	mg/L	04/30/2015
.06	mg/L	10/31/2015
.05	mg/L	11/30/2015
.05	mg/L	12/31/2015
.06	mg/L	01/31/2016
.06	mg/L	02/29/2016
.05	mg/L	03/31/2016
	mg/L	04/30/2016
48.	N	12/31/2012
0.0306		
.0623	**mg/L**	**Mean**
0.4907		**CV**
0.08	**mg/l**	**95th Percentile**

B. Receiving Water Data

Note: Blue indicates data obtained from IDEQ.
Otherwise all data obtained from the Facility.

Date (ALL)	Temp C (ALL)	pH (ALL)
April 6, 2005 @Upstream of lagoon	4.43	8.02
June 26, 2008 @ Upstream of Lagoon	13.28	8.50
July 19, 2006 @ 3200E Upstream	23.02	8.55

July 19, 2006 @ HY91 Upstream	25.14	8.59
Nov 2004	4.0	7.24
Dec 2004	4.6	7.20
Jan 2005	6.0	7.26
Feb 2005	7.4	7.09
Mar 2005	1.1	7.10
Apr 2005	8.4	NE
May 2005	11.3	7.44
Oct 2005	14.2	7.36
Nov 2005	9.2	7.36
Dec 2005	2.4	7.29
Jan 2006	5.7	7.11
Feb 2006	5.5	7.12
Mar 2006	5.4	7.19
Apr 2006	5.7	7.11
Oct 2006	12.1	7.36
Nov 2006	8.5	7.12
Dec 2006	2.5	7.24
Jan 2007	2.6	7.21
Feb 2007	3.9	7.87
Mar 2007	7.0	7.19
Apr 2007	8.4	7.36
Dec 2007	1.2	6.97
Jan 2008	5.2	7.07
Feb 2008	2.8	7.05
Mar 2008	9.3	7.09
Apr 2008	5.4	7.08
Jan 2009	8.9	7.14
Feb 2009	8.0	7.15
Mar 2009	4.0	7.01
Apr 2009	6.4	7.03
95th Percentile	**17.29**	**8.52**

Date (March-April)	**Temp C (March-April)**	**pH (March-April)**
April 6, 2005 @Upstream of lagoon	4.43	8.02
Mar 2005 (Facility Data)	1.1	7.10
Apr 2005	8.4	NE
Mar 2006	5.4	7.19

Apr 2006	5.7	7.11
Mar 2007	7.0	7.19
Apr 2007	8.4	7.36
Mar 2008	9.3	7.09
Apr 2008	5.4	7.08
Mar 2009	4.0	7.01
Apr 2009	6.4	7.03
95th Percentile	**8.85**	**7.72**

Date (Oct-Feb)

Facility Data	**Temp C**	**pH**
Nov 2004	4.0	7.24
Dec 2004	4.6	7.20
Jan 2005	6.0	7.26
Feb 2005	7.4	7.09
Oct 2005	14.2	7.36
Nov 2005	9.2	7.36
Dec 2005	2.4	7.29
Jan 2006	5.7	7.11
Feb 2006	5.5	7.12
Oct 2006	12.1	7.36
Nov 2006	8.5	7.12
Dec 2006	2.5	7.24
Jan 2007	2.6	7.21
Feb 2007	3.9	7.87
Dec 2007	1.2	6.97
Jan 2008	5.2	7.07
Feb 2008	2.8	7.05
Jan 2009	8.9	7.14
Feb 2009	8.0	7.15
95th percentile	**12.31**	**7.41**

Date (Oct-Feb)

Facility data	**NH3**
Nov 2004	0.66
Dec 2004	1.00
Jan 2005	1.66
Feb 2005	2.00
Oct 2005	0.00

Nov 2005	0.00
Dec 2005	0.00
Jan 2006	1.00
Feb 2006	0.00
Oct 2006	0.00
Nov 2006	0.00
Dec 2006	0.00
Jan 2007	0.00
Feb 2007	0.00
Dec 2007	0.03
Jan 2008	0.13
Feb 2008	0.60
Jan 2009	0.04
Feb 2009	0.06
90th Percentile	**1.13**

Date (March-April)	**NH3**
6-Apr-05(IDEQ data)	0.042
Mar 2005 (Facility data)	2.00
Apr 2005	0.00
Mar 2006	0.33
Apr 2006	1.00
Mar 2007	0.00
Apr 2007	1.00
Mar 2008	1.62
Apr 2008	0.04
Mar 2009	0.055
Apr 2009	0.05
90th Percentile	**1.620**

Appendix C. Reasonable Potential and Water Quality-Based Effluent Limit Formulae

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.

Mass Balance

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

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

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:

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

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:

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

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,

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

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

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

After the dilution factor simplification, the mass balance equation becomes:

$$C_d = \frac{C_e\text{-}C_u}{D} + C_u \qquad \text{Equation 6}$$

If the criterion is expressed as dissolved metal, the effluent concentrations are measured in total recoverable metal and must be converted to dissolved metal as follows:

$$C_d = \frac{CF \times C_e\text{-}C_u}{D} + C_u \qquad \text{Equation 7}$$

Where C_e is expressed as total recoverable metal, C_u and C_d are expressed as dissolved metal, and CF is a conversion factor used to convert between dissolved and total recoverable metal.

The above equations for C_d are the forms of the mass balance equation which were used to determine reasonable potential and calculate wasteload allocations.

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 (Ce) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (Ce) 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 (Ce) can be calculated using the following equations:

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

$$p_n = (1 - \text{confidence level})^{1/n} \qquad \text{Equation 8}$$

where,

p_n = the percentile represented by the highest reported concentration
n = the number of samples
confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma\text{-}0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma\text{-}0.5 \times \sigma^2}} \qquad \text{Equation 9}$$

Where,

σ^2 = $\ln(CV^2 + 1)$

Z_{99} = 2.326 (z-score for the 99th percentile)
Z_{Pn} = z-score for the P_n percentile (inverse of the normal cumulative distribution function at a given percentile)
CV = coefficient of variation (standard deviation ÷ mean)

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

$$C_e = (RPM)(MRC) \qquad \text{Equation 10}$$

where MRC = Maximum Reported Concentration

Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

Once the maximum projected effluent concentration is calculated, the maximum projected effluent concentration at the edge of the acute and chronic mixing zones is calculated using the mass balance equations presented previously.

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.

B. WQBEL Calculations

Calculate the Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone in the reasonable potential analysis. To calculate the wasteload allocations, C_d is set equal to the acute or chronic criterion and the equation is solved for C_e. The calculated C_e is the acute or chronic WLA. Equation 6 is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u \qquad \text{Equation 11}$$

Idaho's water quality criteria for some metals are expressed as the dissolved fraction, but the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, the EPA must calculate a wasteload allocation in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator, as shown in equation __. As discussed in Appendix ___, the criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT} \qquad \text{Equation 12}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from the EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\sigma)} \qquad \text{Equation 13}$$

$$LTA_c = WLA_c \times e^{(0.5\sigma_4^2 - z\sigma_4)} \qquad \text{Equation 14}$$

where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile probability basis)
CV = coefficient of variation (standard deviation ÷ mean)
σ_4^2 = $\ln(CV^2/4 + 1)$

For ammonia, because the chronic criterion is based on a 30-day averaging period, the Chronic Long Term Average (LTAc) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \quad \text{Equation 15}$$

where,

σ_{30}^2 = $\ln(CV^2/30 + 1)$

The LTAs are compared and the more stringent is used to develop the daily maximum and monthly average permit limits as shown below.

Derive the maximum daily and average monthly effluent limits

Using the TSD equations, the MDL and AML effluent limits are calculated as follows:

$$MDL = LTA \times e^{(z_m\sigma - 0.5\sigma^2)} \quad \text{Equation 16}$$

$$AML = LTA \times e^{(z_a\sigma_n - 0.5\sigma_n^2)} \quad \text{Equation 17}$$

where σ, and σ^2 are defined as they are for the LTA equations above, and,

σ_n^2 = $\ln(CV^2/n + 1$
z_a = 1.645 (z-score for the 95th percentile probability basis)
z_m = 2.326 (z-score for the 99th percentile probability basis)
n = number of sampling events required per month. With the exception of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 4. For ammonia, In the case of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 30.

C. Critical Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Idaho's WQS 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
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 exceedence 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.

Appendix D. Reasonable Potential and Water Quality Based Effluent Limit Calculations

EPA performed Reasonable Potential analysis, using a Design Flow of 0.0625 mgd, with receiving water High Flow and Low Flow seasonal parameters. The analysis utilized the facility's discharge concentrations, with seasonal ambient pH and ambient temperature values.

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Franklin WWTP
Facility Flow (mgd)	0.0625
Facility Flow (cfs)	0.097

Critical River Flows	(IDAPA 58.01.02 03. b)	USGS Oct-Feb Seasonal Low Flow	USGS March-April Seasonal High Flow	Oct-Feb Seasonal Crit. Flows	March-april Seasonal Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	1Q10	2.33	11.20	2.3	11.20
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	7Q10 or 4B3	2.39	13.20	2.4	13.20
Ammonia	30B3/30Q10 (seasonal)	2.42	21.40	2.4	21.40
Human Health - Non-Carcinogen	30Q5			--	--
Human Health - carcinogen	Harmonic Mean Flow			7.1	7.1

Receiving Water Data			5th % at critical flows	Seasonal Low Flow	Seasonal High Flow	
Hardness, as mg/L $CaCO_3$	= 100 mg/L					DMR data
Temperature, °C		Temperature, °C	95th percentile	12.31	8.85	USGS data
pH, S.U.		pH, S.U.	95th percentile	7.41	7.72	Facity+ DEQ data

Pollutants of Concern			AMMONIA, default: cold water, fish early life stages	AMMONIA, default: cold water, fish early life stages	CHLORINE (Total Residual)	CHLORINE (Total Residual)
Effluent Data	Number of Samples in Data Set (n)		13	13	48	48
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.524	0.524	0.491	0.491
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		23,666	23,666	80	80
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only					
Receiving Water Data	90th Percentile Conc., µg/L - (C_u)		1130	1620	0	0
	Geometric Mean, µg/L, Human Health Criteria Only					
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	15,130	9,321	19	19
	Aquatic Life Criteria, µg/L	Chronic	4,698	3,499	11	11
	Human Health Water and Organism, µg/L		--	--	--	--
	Human Health, Organism Only, µg/L		--	--	--	--
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute			--	--
		Chronic			--	--
	Carcinogen (Y/N), Human Health Criteria Only		--	--	N	N
Percent River Flow Default Value = 25%	Aquatic Life - Acute	1Q10	25%	25%	25%	25%
	Aquatic Life - Chronic	7Q10 or 4B3	--	--	25%	25%
	Ammonia	30B3 or 30Q10	25%	25%	25%	25%
	Human Health - Non-Carcinogen	30Q5	--	--	25%	25%
	Human Health - carcinogen	Harmonic Mean	--	--	25%	25%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	7.0	30.0	7.0	30.0
	Aquatic Life - Chronic	7Q10 or 4B3	--	--	7.2	35.1
	Ammonia	30B3 or 30Q10	7.3	56.3	7.3	56.3
	Human Health - Non-Carcinogen	30Q5	--	--	1.0	1.0
	Human Health - carcinogen	Harmonic Mean	--	--	19.3	19.3

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.493	0.493	0.465	0.465
P_n	=(1-confidence level)^n, where confidence level	99%	0.702	0.702	0.909	0.909
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)-0.5\sigma^2]$, where	99%	2.4	2.4	1.6	1.6
Statistically projected critical discharge concentration (C_e)			57350.78	57350.78	127.01	127.01
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	9133.46	3480.22	0.00	0.00
(note:for metals, concentration as dissolved using conversion factor as translator)		Chronic	8876.82	2609.31	17.69	3.62
Reasonable Potential to exceed Aquatic Life Criteria			YES	NO	YES	NO

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)			4	4	4	4
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			30	--	4	--
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		0.524	--	0.491	--
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		0.524	--	0.491	--
Acute WLA, ug/L	C_d = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	99,470.9	--	133.5	--
Chronic WLA, ug/L	C_d = (Chronic Criteria x MZ_c) - C_u x (MZ_c-1)	Chronic	27,022.6	--	79.0	--
Long Term Ave (LTA), ug/L	WLAc x exp(0.5σ^2-zσ), Acute	99%	35,705.7	--	50.4	--
(99th % occurrence prob.)	WLAa x exp(0.5σ^2-zσ); ammonia n=30, Chronic	99%	21,740.5	--	46.3	--
Limiting LTA, ug/L	used as basis for limits calculation		21,740.5	--	46.3	--
Applicable Metals Criteria Translator (metals limits as total recoverable)			--	--	--	--
Average Monthly Limit (AML), ug/L , where % occurrence prob =		95%	25,321	--	67	--
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		99%	60,566	--	123	--
Average Monthly Limit (AML), mg/L			25.321	--	0.067	--
Maximum Daily Limit (MDL), mg/L			60.566	--	0.123	--
Average Monthly Limit (AML), lb/day			13.20	--	0.035	--
Maximum Daily Limit (MDL), lb/day			31.57	--	0.064	--

TP Calculations

The WLA for the City of Franklin WWTP:

a) For October to February, the WLA is 0.05 lbs/day (rounded from 0.048 lbs/day).

b) For March to April, the WLA is 3.56 lbs/day.

The NPDES regulations require that NPDES permits include effluent limits consistent with the assumptions and requirements of any WLA assigned to the discharge as part of an approved TMDL (See 40 CFR122.44(d)(1)(vii)(B)). To be consistent with the averaging period, EPA is expressing setting the annual average to be equal to the long term average in the water quality based effluent limit calculations.

(1) Average Monthly Limit

a) For October to February

The long-term average (LTA) is set equal to the annual average WLA of 0.048 lbs/day. n = 4 with weekly sampling for TP. CV = 0.6, the default CV set by the Technical Support Document for Water Quality-Based Toxics Control (*TSD*). The formula for calculating an average monthly effluent limit (AML) is as follows (see the *TSD* at Table 5-2, page 106):

Multiplier to Calculate Permit Limits from LTA

Number of Samples per Month (n)			**4**
Coefficient of Variation (CV) = Std. Dev./Mean			**0.6**
σ = std deviation	$\sigma^2=\ln(CV^2+1)$		0.555
Average Monthly Limit (AML),	$\exp(z\sigma_n-0.5z\sigma_n^2)$; where % probability basis =	**95%**	**1.55**

Calculation:

AML = LTA, limiting x multiplier = limit

AML = 0.048 lbs/day x 1.55 = 0.07 lbs/day (rounded to 2 decimal places)

b) For March to April

The LTA is set to the annual average WLA of 3.56 lbs/day. Using the same methodology as shown above, the multiplier is 1.55. Therefore, the AML is:

AML = LTA, limiting x multiplier = limit

AML = 3.56 lbs/day x 1.55 = 5.52 lbs/day

(2) Average Weekly Limit

a) For October to February

n = 4 with weekly sampling for TP. CV = 0.6 , the default CV set by the *TSD*. The formula for calculating an AWL is as follows (see the *TSD* page 106):

Multiplier to Calculate Average Weekly Limit (AWL) from Average Monthly Limit

Number of Samples per Month Set (n)			**4**
Number of Samples per Week Set (n/4)			**1**
Coefficient of Variation (CV) = Std. Dev./Mean			**0.6**
σ = std deviation	$\sigma^2=\ln(CV^2+1)$		0.555
Average Monthly Limit (AML),	$\exp(z\sigma_n-0.5z\sigma_n^2)$; where % probability basis =	**95%**	1.55
Average Weekly Limit (AWL),	$\exp(z\sigma_{n/4}-0.5z\sigma_{n/4}^2)$; where % probability basis =	**99%**	3.12
Ratio AWL/AML			**2.01**

Calculation:

AWL = AML x Multiplier

AWL = 0.07 lbs/day x 2.01 = 0.14 lbs/day

b) For March and April

AWL = AML x Multiplier

AWL = 5.52 lbs/day x 2.01 = 11.10 lbs/day

Total Suspended Solids Calculations

The TSS WLA for the City of Franklin WWTP is 2,255 kg/yr (see Table 1-3 of the *2006 TMDL*) which can be expressed as 13.61 lbs/day as an annual average using the following calculation:

$$\frac{2{,}255\ \text{kg}}{\text{Year}} \times \frac{1\ \text{year}}{365.25\ \text{days}} \times \frac{2.20462\ \text{lbs}}{\text{kg}} = 13.61\ \text{lbs/day}$$

The NPDES regulations require that NPDES permits include effluent limits consistent with the assumptions and requirements of any WLA assigned to the discharge as part of an approved TMDL (See 40 CFR122.44(d)(1)(vii)(B)). To be consistent with the averaging period, EPA is expressing

setting the annual average to be equal to the long term average in the water quality based effluent limit calculations.

Average Monthly Limit

The long-term average (LTA) is set equal to the annual average WLA of 13.61 lbs/day. n = 4 with weekly sampling for TSS. CV = 0.6, the default CV set by the Technical Support Document for Water Quality-Based Toxics Control (*TSD*). The formula for calculating an average monthly effluent limit (AML) is as follows (see the *TSD* at Table 5-2, page 106):

Multiplier to Calculate Permit Limits from LTA

Number of Samples per Month (n)			**4**
Coefficient of Variation (CV) = Std. Dev./Mean			**0.6**
σ = std deviation	$\sigma^2=\ln(CV^2+1)$		0.555
Average Monthly Limit (AML),	$\exp(z\sigma_n-0.5z\sigma_n^2)$; where % probability basis =	**95%**	**1.55**

Calculation: **LTA, Limiting x Multiplier = Limit**

AML = LTA, limiting x Multiplier = 13.61 lbs/day x 1.55 = 21.10 lbs/day

Comparing the WQ-based AML of 21.1 lbs/day to the Technology-based AML of 16 lbs/day, the Technology-based AML is more stringent and is therefore retained.

Average Weekly Limit

n = 4 with weekly sampling for TSS. CV = 0. , the default CV set by the *TSD*. The formula for calculating an AWL is as follows (see the *TSD* page 106):

Multiplier to Calculate Average Weekly Limit (AWL) from Average Monthly Limit

Number of Samples per Month Set (n)			**4**
Number of Samples per Week Set (n/4)			**1**
Coefficient of Variation (CV) = Std. Dev./Mean			**0.6**
σ = std deviation	$\sigma^2=\ln(CV^2+1)$		0.555
Average Monthly Limit (AML),	$\exp(z\sigma_n-0.5z\sigma_n^2)$; where % probability basis =	**95%**	1.55
Average Weekly Limit (AWL),	$\exp(z\sigma_{n/4}-0.5z\sigma_{n/4}^2)$; where % probability basis =	**99%**	3.12
Ratio AWL/AML			**2.01**

Calculation: **AML x Multiplier = AWL**

AWL = AML x multipier = 21.10 x 2.01 = 42.40 lbs/day

Comparing the WQ-based AML of 42.2 lbs/day to the Technology-based AML of 23 lbs/day, the Technology-based AML is more stringent and is therefore retained.

Appendix E. CWA 401 State Certification

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

October 31, 2017

NPDES Permit Number(s): Permit #ID0025569, City of Franklin, Idaho

Receiving Water Body: Cub 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, 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 I 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 I review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier II 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 III 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 I protection for that use, unless specific circumstances warranting Tier II 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 Franklin Wastewater Treatment Plant (WWTP) discharges the following pollutants of concern: biochemical oxygen demand (BOD_5), total suspended solids (TSS), *E. coli*, total residual chlorine (TRC); pH; temperature; total ammonia; total phosphorus (TP); and floating, suspended, or submerged matter. Effluent limits are proposed for: BOD_5; TSS; *E.coli*; TRC; pH; total ammonia (seasonal, Oct. 1 through the Feb. 28/29); total phosphorus; and floating, suspended, or submerged matter. Although no effluent limits are proposed for total ammonia (seasonal, Mar. 1 through Apr. 30) and temperature, monitoring is required for these pollutants.

Changes in Treatment Capacity and Technology

The City of Franklin WWTP is currently constructing upgrades to the facility. The planned facility upgrades include:

- New intermediate pump station to convey flow from the existing chlorine contact chamber to the new winter storage lagoon.
- New force main from the new intermediate pump station to the new winter storage lagoon.
- New 24-million gallon winter storage lagoon.
- New chlorination equipment and chlorine contact pipe.

In addition, the City of Franklin is increasing its land application site from 28 acres to 90 acres. Once the upgrades are complete, the facility will likely only need to discharge to Cub River during the month of April, when the 24-million gallon storage lagoon is full and before the start of the land application season (May-September).

Receiving Water Body Level of Protection

The City of Franklin discharges to the Cub River within the Middle Bear River Subbasin assessment unit (AU) ID16010202BR002_04 (Cub River – Maple Creek to Border). This AU has the following designated beneficial uses: coldwater aquatic life and secondary contact recreation. In addition to these uses, all waters of the state are protected for agricultural and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

According to DEQ's 2014 Integrated Report, this AU is not fully supporting the aquatic life use. Causes of impairment identified in the Integrated Report are excess sediment and total phosphorus. The secondary contact recreation beneficial use is fully supported. As such, DEQ will provide Tier I protection (IDAPA 58.01.02.051.01) for the aquatic life use and Tier II

protection (IDAPA 58.01.02.051.02) in addition to Tier I protection for the secondary contact recreation use.

There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated and discussed above; therefore, the permit ensures that the level of water quality necessary to protect both existing and designated uses is maintained and protected in compliance with the Tier I provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Protection and Maintenance of Existing Uses (Tier I Protection)

As noted above, a Tier I 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 and designated uses and the level of water quality necessary to protect existing and designated uses shall be maintained and protected. In order to protect and maintain existing and designated 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 existing and designated beneficial uses. The effluent limitations and associated requirements contained in the City of Franklin permit including critical low flow seasonal limits for ammonia (October 1 to February 28/29) and chlorine (October 1 to April 30) are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and are protective of the aquatic life beneficial use.

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.

Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect uses (IDAPA 58.01.02.055.04).

The EPA-approved *Bear River/Malad River Subbasin Assessment and Total Maximum Daily Load Plan (2006) and the Bear River Basin, Addendum to the Bear River/Malad River Subbasin Assessment and Total Maximum Daily Load Plan for HUCs 16010102, 16010201, 16010202, 16010204 (2013)* establishes wasteload allocations for TSS and total phosphorus. These wasteload allocations are designed to ensure the Cub River will achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. The effluent limitations and associated requirements contained in the City of Franklin permit are set at levels that comply with these wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the City of Franklin permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the *Bear River/Malad River TMDL Plans*. Therefore, DEQ has determined the permit will protect and maintain known existing and

designated beneficial uses in the Cub River in compliance with the Tier I provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

High-Quality Waters (Tier II Protection)

The Cub River is considered high quality for secondary contact recreation. As such, the water quality relevant to secondary contact recreation uses of the Cub River 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 secondary contact recreation uses of the Cub River (IDAPA 58.01.02.052.05). These include the following: *E. coli*; total phosphorus; and floating, suspended, or submerged matter. Effluent limits are set in the proposed and existing permit for *E. coli*; a new limit is set in the proposed permit for total phosphorus; and the new permit proposes once-monthly visual observations for floating, suspended, or submerged matter.

For a reissued permit, 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 (IDAPA 58.01.02.052.06.a).

Pollutants with Limits in the Current and Proposed Permit: E. coli

For pollutants that are currently limited and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit (IDAPA 58.01.02.052.06.a.i), and the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.06.a.ii). For the City of Franklin permit, this means determining the permit's effect on water quality based upon the limits for *E.coli* in the current and proposed permits. Table 1 provides a summary of the current permit limits and the proposed or reissued permit limits.

Effluent limits for E. coli in the proposed permit are the same as the previous permit and are protective of beneficial uses. In addition, the facility upgrades coupled with the increase in land application acreage should help ensure compliance with the permit and protect beneficial uses. Therefore, DEQ does not anticipate a change in water quality related to secondary contact recreation due to the *E.coli* limit in the new permit.

Table 1. Comparison of current and proposed permit limits for pollutants of concern relevant to uses receiving Tier II protection.

Pollutant	Units	Current Permit			Proposed Permit			Change[a]
		Average Monthly Limit	Average Weekly Limit	Max Daily Limit	Average Monthly Limit	Average Weekly Limit	Max Daily Limit	
Pollutants with limits in both the current and proposed permit								
E. coli	cfu/100 mL	126	--	576	126	--	576	NC
Total Phosphorus Oct 1 – Feb. end	lbs/day				0.07	0.14		D
	lbs/day				Seasonal ave = 0.05 lbs/day			
Total Phosphorus Mar 1 – Apr 30					5.52	11.10		D
					Seasonal ave = 3.56 lbs/day			
Floating/Suspended or Submerged Matter	--	--	--	--	1/month	--	Visual Observation	D

[a] NC = no change, I = increase, D = decrease.

New Permit Limits for Pollutants Currently Discharged; Total Phosphorus and Floating, Suspended, or Submerged Matter

When new limits are proposed in a reissued permit for pollutants in the existing discharge, the effect on water quality is based upon the current discharge quality and the proposed discharge quality resulting from the new limits. Current discharge quality for pollutants that are not currently limited is based upon available discharge quality data (IDAPA 58.01.02.052.06.a.i). Future discharge quality is based upon proposed permit limits (IDAPA 58.01.02.052.06.a.ii).

The proposed permit for City of Franklin includes new numeric limits for total phosphorus and non-numeric limits for floating/suspended submerged matter (Table 1). The total phosphorus limits were included in the permit to be consistent with the wasteload allocations in the approved *Bear River/Malad River Subbasin Assessment and Total Maximum Daily Load Plan (2006) and the Bear River Basin, Addendum to the Bear River/Malad River Subbasin Assessment and Total Maximum Daily Load Plan for HUCs 16010102, 16010201, 16010202, 16010204 (2013)*.

By limiting the phosphorus loads with new effluent limits and ensuring there is no discharge of floating, suspended, or submerged matter of any kind in concentrations causing nuisance or unfavorable conditions in the Cub River, there should be no degradation of water quality with respect to these pollutants as it relates to recreational beneficial uses.

In sum, DEQ concludes that this discharge permit complies with the Tier II provisions of Idaho's WQS (IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.06).

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

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 25% of the critical flow volumes of Cub River for ammonia and chlorine. For further information about the authorized mixing zone, critical flow volume, and dilution factors see section *V.C Water Quality-Based Effluent Limits*, Table 9 in the fact sheet.

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 at the Pocatello Regional DEQ office at 208-236-6160 or via email at lynn.vanevery@deq.idaho.gov.**

DRAFT

Bruce Olenick
Regional Administrator
Pocatello Regional Office