Fact Sheet for IPDES Permit No. IDXXXXXXX

Insert date of this draft fact sheet when issued for public notice or final fact sheet

Idaho Department of Environmental Quality (DEQ) Proposes to Re/Issue an
Idaho Pollutant Discharge Elimination System (IPDES) Permit to Discharge Pollutants
Pursuant to the Provisions of IDAPA 58.01.25 to:

Insert Facility Name

Public Comment Start Date:	insert MM/DD/YYYY
Public Comment Expiration Date:	insert MM/DD/YYYY
Technical Contact:	Insert Permit Writer's Name, Phone #, Email

Purpose of this Fact Sheet

This fact sheet explains and documents the decisions the Idaho Department of Environmental Quality (DEQ) made in drafting the proposed Idaho Pollutant Discharge Elimination System (IPDES) permit for insert facility name.

This fact sheet complies with IDAPA 58.01.25.108.02 of the Idaho Administrative Code, which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an NPDES permit.

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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
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
BMP	Best Management Practices
BPT	Best Practicable control Technology currently available
°C	Degrees Celsius
$CBOD_5$	Carbonaceous Biochemical Oxygen Demand, five-day
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COD	Chemical Oxygen Demand
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FDF	Fundamentally Different Factor
gpd	Gallons per day

IC	Inhibition Concentration
ICIS	Integrated Compliance Information System
DEQ	Idaho Department of Environmental Quality
I/I	Inflow and Infiltration
IPDES	Idaho Pollutant Discharge Elimination System
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
MDL	Maximum Daily Limit or Method Detection Limit
mgd	Million gallons per day
mg/L	Milligrams per liter
ml	Milliliters
ML	Minimum Level
MPN	Most Probable Number
N	Nitrogen
NEPA	National Environmental Policy Act
NOEC	No Observable Effect Concentration
NOI	Notice of Intent
NSPS	New Source Performance Standards
O&M	Operations and maintenance
POTW	Publicly Owned Treatment Works
PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources
QAPP	Quality Assurance Project Plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration

SIC	Standard Industrial Classification
SPCC	Spill Prevention, Control, and Countermeasure
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU_a	Toxic Units, Acute
TU_c	Toxic Units, Chronic
UV	Ultraviolet
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

1 Introduction

This fact sheet explains and documents the decisions the Idaho Department of Environmental Quality (DEQ) made in drafting the proposed Idaho Pollutant Discharge Elimination System (IPDES) permit for Insert Name. This fact sheet complies with the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25), which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an IPDES permit.

DEQ proposes to select one: Issue/Reissue/Modify/Revoke and Reissue the IPDES permit for Insert Facility Name or Municipality Name and Treatment Works. 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:

- a map and description of the discharge location;
- a listing of proposed effluent limits and other conditions the facility must comply with;
- documentation supporting the proposed effluent limits;
- technical material supporting the conditions in the permit; and
- information on public comment, public hearing, and appeal procedures.

Terms used in this fact sheet are defined in Section 5, Definitions, of the permit.

Public Comment

The permit application, draft permit, and fact sheet describing the terms and conditions applicable to the permit are available for public review and comment during a public comment period. The public is provided at least 30 days to review, compose comments, and provide them to DEQ. Persons wishing to request a Public Hearing for this facility's draft permit must do so in writing within the first 14 days of the public comment period. Requests for extending a public comment period must be provided to DEQ in writing before the last day of the comment period. For more details on preparing and filing comments about these documents, please see the IPDES guidance *Public Participation in the Permitting Process*. For more information, please contact the permit writer insert name, phone, email.

After the close of the public comment period, DEQ considers information provided by the public, prepares a document summarizing the public comments received, and may make changes to the draft permit in response to the public comments. DEQ will include the summary and responses to comments in the final fact sheet D. After the public comment period and prior to issuing the final permit decision, DEQ will give the applicant an opportunity to provide additional information to respond to public comments. DEQ may request more information from the applicant in order to respond to public comments (IDAPA 58.01.25.109.02.h.).

DEQ will assess the public comment in conjunction with any additional information received from the applicant and develop a proposed permit. EPA may take up to 90 days to develop and document specific grounds for objections to a proposed permit. If EPA objects to a proposed permit DEQ must satisfactorily address the objections within the time period specified in the

memorandum of agreement between EPA and DEQ (40 CFR §123.44). Otherwise, EPA may issue a permit that rectifies their objections. If EPA issues the permit any state, interstate agency, or interested person may request EPA hold a public hearing regarding the objection.

Permit Issuance

Following the public comment period(s) on a draft permit, and after receipt of any comments on the proposed permit from EPA, DEQ will issue a final permit decision, the final permit, and the fact sheet. A final permit decision means a final decision addressing permit action to issue, deny, modify, revoke and reissue, or terminate a permit (IDAPA 58.01.25.107.04.). The final permit, response to comments, final fact sheet, and associated permit documents will be posted on the DEQ webpage.

The public has access to a permit appeals process (IDAPA 58.01.25.204). Appeal of a final IPDES permit decision begins by filing a petition for review with DEQ's hearing coordinator within 28 days after DEQ serves notice of the final permit decision. Only a person who is aggrieved by the final permit decision (i.e., the permit holder or applicant and any person or entity who filed comments or who participated in the public meeting on the draft permit) may file a petition for review. Ultimately, any person aggrieved by a final department action or determination has a right to judicial review by filing a petition for review (IDAPA 58.01.25.204.26).

Documents are Available for Review

The draft IPDES permit and related documents can be reviewed or obtained by visiting or contacting the DEQ State office between 8:00 a.m. and 5:00 p.m., Monday through Friday at the address below. The draft permit, fact sheet, and other information can also be found by visiting the DEQ website at "http://www.deq.idaho.gov/news-public-comments-events/."

DEQ
1410 N. Hilton
Boise, ID 83706
208-373-0502

The fact sheet and draft permits are also available at the applicable Regional Office:

Insert Regional Office
Insert Street address
City, ID 83XXX

Insert another location

2 Background Information

2.1 Facility Description

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

Table 1. Facility information.

Idaho NPDES Permit #	
Applicant	
Facility Name and Address	
Facility Contact	Name: Telephone number:
Responsible Official	Name: Title: Address: Telephone number: FAX number:
Type of Treatment	
Facility Location	Latitude: Longitude:
Receiving Water Name	
Outfall Location	Latitude: Longitude
Permit Status	
Issuance or Renewal	
Application Submittal Date	
Date Application Deemed Complete	
Inspection Status	
Date of Last Sampling Inspection	
Date of Last Non- Sampling Inspection	

Insert Owner owns and operates the Insert POTW Name (POTW) located in Insert City, Insert State. The collection system has no combined sewers. The facility serves a resident population of insert population. There are insert no or number of major industries discharging to the facility.

Insert Owner/Operator owns/operates the Insert Facility Name located at Insert Address, discharges to Name of Receiving Water at Latitude/Longitude of Outfall.

2.1.1 History

Insert facility history here

2.1.2 Collection System Status

Insert collection system information here

2.1.3 Treatment Process

The design flow of the facility is insert number mgd. The treatment process consists of provide unit processes used to treat domestic wastewater. Details about the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix E. Because of fill in reasons, the facility is considered a major/minor facility.

Insert Treatment Process information here

2.1.4 Solid wastes/Residual Solids

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and at the primary and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Insert Name drains grit, rags, scum, and screenings and disposes this solid waste at the local landfill. Solids removed from the primary and secondary clarifiers are treated insert process used and land applied under a permit from the Insert Health District.

2.1.5 Outfall Description

Insert outfall description

2.2 Description of Receiving Water

Insert facility name discharges to insert receiving water body in insert City, Town or County, Idaho. The outfall is located insert upstream / downstream of insert identifying place/landmark, township and range, river mile, etc. Other nearby point source outfalls include list facility outfalls and locations. Nearby non-point sources of pollutants include list sources. Nearby drinking water intakes include insert drinking water intakes located at insert location. Section 3.3 of this fact sheet describes any receiving waterbody impairments.

The ambient background data used for this permit includes the following from insert source(s).

Table 2. Ambient background data.

Parameter	Value used
Insert parameter	Insert Value and Units

2.3 Wastewater Influent Characterization

Insert applicable items. Insert Facility Name reported the concentration of influent pollutants in DMRs and results are characterized in Table 3. The tabulated data represents the quality of the wastewater effluent discharged from Insert date range.

Table 3. Wastewater influent characterization.

Parameter	Units	# of Samples	Average Value	Maximum Value	Data Source
Insert	Insert	Insert	Insert	Insert	Insert

2.4 Wastewater Effluent Characterization

Insert applicable items.

Insert Facility Name reported the concentration of influent pollutants in DMRs and results are characterized in Table 4. The tabulated data represents the quality of the wastewater effluent discharged from Insert date range.

Table 4. Wastewater effluent characterization.

Parameter	Units	# of Samples	Average Values	Maximum Values	Data Source
Insert	Insert	Insert	Insert	Insert	Insert
Parameter	**Units**	**# of Samples**	**Maximum Monthly Geometric Mean**	**Maximum Weekly Geometric Mean**	
E. Coli					
Parameter	**Units**	**# of Samples**	**Minimum Value**	**Maximum Value**	
pH	standard units				

2.5 Identify Pollutants of Concern

In order to determine pollutants of concern for further analysis, DEQ evaluated the application form, additional discharge data, and the nature of the discharge. Based on this analysis, pollutants of concern are as follows:

- Insert pollutant

Pollutant concentrations in the discharge which were reported in either the IPDES application or DMRs were used in determining reasonable potential for several parameters (see Appendix C).

2.6 Compliance History

Insert text here

Table 5. Effluent limit violations.

Parameter	Limit	Units	Number of Instances
Insert	Insert	Insert	Insert

DEQ conducted an inspection of the facility in insert month and year. The inspection encompassed the wastewater treatment process, records review, operation and maintenance, and the collection system. Overall, the results of the inspection were fill in results.

3 Proposed Permit Limits

Federal and state regulations require that effluent limits in an NPDES permit must be either technology or water quality-based.

Technology-based limits are based upon the treatment methods available to treat specific pollutants. Technology-based limits are set by the EPA and published as a regulation, or DEQ develops the limit on a case-by-case basis (40 CFR 125.3 and IDAPA 58.01.02).

Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (IDAPA 58.1.02) or the National Toxics Rule (40 CFR 131.36).

DEQ must apply the most stringent of these limits to each parameter of concern. These limits are described below.

3.1 Technology-Based Effluent Limits

Federal and state regulations define technology-based effluent limits for insert domestic wastewater treatment plants or industrial facilities. These effluent limits are given in IDAPA 58.01.25.302, and select either 40 CFR Part 133 or 40 CFR Parts 401-471 .

Table 6. Secondary treatment effluent limits (40 CFR 133.102).

Parameter	30-day average	7-day average
BOD_5	30 mg/L	45 mg/L
$cBOD_5$	25 mg/L	40 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.	

Both the federal and state regulations allow alternate limits for waste stabilization ponds (lagoons), trickling filters, and facilities with less concentrated influent wastewater.

Table 7. Equivalent to secondary treatment effluent limits (40 CFR 133.105).

Parameter	30-day average	7-day average
BOD_5	45 mg/L	65 mg/L
$cBOD_5$	40 mg/L	60 mg/L
TSS	45 mg/L	65 mg/L
Removal for BOD_5/$cBOD_5$ and TSS (concentration)	65% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

Insert text starting here

3.2 Water Quality-Based Effluent Limits

The DEQ water quality standards (IDAPA 58.01.02) are designed to protect existing water quality and preserve the beneficial uses of Idaho's surface waters. Waste discharge permits must include conditions that ensure the discharge will meet the water quality standards (IDAPA 58.01.25.302.06). Water quality-based effluent limits may be based on an individual waste load

allocation or on a waste load allocation developed during a basin wide total maximum daily load study (TMDL).

Idaho's water quality standards are comprised of three parts: designated uses, numeric and/or narrative water quality criteria and an antidegradation policy.

3.2.1 Beneficial Uses

Idaho's WQS (IDAPA 58.01.02.100) describes designated beneficial uses and the use categories that may be applied in Idaho. Specifically, these are by category (aquatic life, recreation, or water supply) and subcategory (for example, cold water aquatic life or primary contact recreation):

- Aquatic Life—salmonid spawning, cold water, seasonal cold water, or warm water
- Recreation—primary contact or secondary contact
- Water Supply—domestic, agricultural, or industrial

In addition, aesthetic and wildlife uses apply to all waters.

This facility discharges to the Insert Receiving Water in the Insert Assessment Unit. At the point of discharge, the Insert Receiving Water is protected for the following beneficial uses (IDAPA 58.01.02.Insert Appropriate Basin Subsection #):

- Insert beneficial use
- Insert beneficial use
- Insert beneficial use
- Insert beneficial use

Insert text here

3.2.2 Criteria

There are two types of criteria; narrative, and numeric.

3.2.2.1 Narrative criteria

Narrative water quality criteria (e.g., IDAPA 58.01.02.200) limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge. Surface waters of the state shall be free from:

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

- sediment in quantities that impair designated beneficial uses.

Narrative criteria protect the specific designated uses of all fresh waters

3.2.2.2 Numeric Criteria for Toxics

Idaho Water Quality Standards (IDAPA 58.01.02.210) provide the numeric criteria for toxic substances for waters designated for aquatic life, recreation, or domestic water supply use. Monitoring of the effluent has shown that the following toxic pollutants have been present at detectable levels in the effluent:

Insert toxic pollutants present in effluent

3.2.2.3 Numeric Criteria to protect Aquatic Life Uses

pH: Within the range of 6.5 to 9.0

Total Dissolved Gas: <110% saturation at atm. pressure.

Dissolved Oxygen: Exceed 6 mg/L at all times.

Temperature: Water temperatures of 22°C or less with a maximum daily average of no greater than 19°C.

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 equations used to determine water quality criteria for ammonia can be found in Appendix C.

Insert collecting entity has collected pH data in the insert name of receiving water upstream and downstream of the facility from insert dates. Temperature data were collected upstream of the facility from insert dates. These data were used to determine the appropriate pH and temperature values to calculate the ammonia criteria.

As with any natural water body the pH and temperature of the water will vary over time. Therefore, to protect water quality criteria it is important to develop the criteria based on pH and temperature values that will be protective of aquatic life at all times. DEQ used the insert 95th percentile or maximum of the pH and temperature data for the calculations, which were calculated to be insert pH 95th percentile or maximum and insert temperature 95th percentile or maximum.

Turbidity: Turbidity below any applicable mixing zone set by the Department shall not exceed background turbidity by more than 50 NTU instantaneously or more than 25 NTU for more than ten (10) consecutive days.

Salmonid spawning: Waters designated for salmonid spawning are to exhibit the following characteristics during the spawning period and incubation for the particular species inhabiting those waters:

Water temperatures of 13°C or less with a maximum daily average no greater than 9°C.

3.2.2.4 Numeric Criteria to protect Recreational Uses

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

Use of Single Sample Values: This section states that that a water sample that exceeds certain "single sample maximum" values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the "single sample maximum" value is 406 cfu/100 ml (IDAPA 58.01.02.251.01.b.ii.) for primary contact recreation and 576 cfu/100 ml for secondary contact recreation.

3.2.3 Antidegradation

DEQ's antidegradation policy provides three levels of protection from degradation of existing water quality.

- Tier I of antidegradation protection applies to all water bodies under the CWA and requires that existing uses and the water quality necessary to protect those uses be maintained and protected.
- Tier II protection applies to any water bodies considered to be high quality waters (where the water quality exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water) and provides that water quality will be maintained and protected unless allowing for lower water quality is deemed by the state as necessary to accommodate important economic or social development in the area. In allowing any lowering of water quality DEQ must ensure adequate water quality to protect existing uses fully and must assure that there will be achieved the highest statutory and regulatory requirements for all new and existing point sources.
- Tier III protection applies to water bodies that have been designated by DEQ as outstanding national resource waters and provides that water quality is to be maintained and protected.

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

As noted above, a Tier I review is performed for all new or reissued permits, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain the designated insert uses here and existing insert uses here uses for insert receiving water body, the effluent limits and associated requirements in

this permit are set at levels that ensure compliance with the narrative and numeric water quality standards.

To determine whether degradation may occur, DEQ evaluated how the effluent limits proposed in this permit affect water quality for each pollutant that is relevant to insert aquatic life use here and insert recreation use here. These include insert pollutants here.

Insert tier II analysis starting here

3.2.4 Clean Water Act §402(o)(3)

DEQ compared the effluent limits proposed in this permit with the Insert previous permit issued OR permit modified on _____

Table 8. Comparison of previous and proposed effluent limits.

		Previous Effluent Limits: Outfall # 001		Proposed Effluent Limits: Outfall # 001	
Parameter	**Basis of Limit**	**Average Monthly**	**Average Weekly**	**Average Monthly**	**Average Weekly**
Insert parameter					

Insert text to describe rationale for effluent limit changes

3.2.5 Mixing zones

A mixing zone is the defined area in the receiving water surrounding the discharge where wastewater mixes with receiving water. Within mixing zones the pollutant concentrations may exceed water quality numeric standards, so long as the discharge doesn't interfere with designated uses of the receiving water body (for example, recreation, water supply, and aquatic life and wildlife habitat, etc.) The pollutant concentrations outside of the mixing zones must meet water quality numeric standards.

DEQ has not authorized a mixing zone in the permit.

DEQ has authorized a mixing zone in the permit. Pollutants in an effluent may affect the aquatic environment near the point of discharge (zone of initial dilution), but not past the boundary of the authorized mixing zone. Insert text here

Table 9. Dilution factors.

Criteria	Acute	Chronic
Aquatic Life	Insert	Insert
Human Health, Carcinogen	Insert	Insert
Human Health, Non-carcinogen	Insert	Insert

3.3 Water Quality Impairments

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.

The EPA-approved insert appropriate TMDL name (date of TMDL) establishes wasteload allocations for insert pollutants with wasteload allocations. These wasteload allocations are designed to ensure the insert receiving water body name 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 insert name of facility permit are set at levels that comply with these wasteload allocations.

Insert text here

DEQ has not documented any water quality impairments in the receiving water in the vicinity of the outfall.

Insert receiving water name is listed on the current 303(d) and is impaired for insert pollutant. DEQ is currently conducting a Total Maximum Daily Load (TMDL)…… OR DEQ has completed a Total Maximum Daily Load (TMDL)……..

3.4 Evaluation of Water Quality-Based Effluent Limits for Narrative Criteria

DEQ must consider the narrative criteria described in IDAPA 58.01.02.200 when it determines permit limits and conditions. Narrative water quality criteria limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge which have the potential to adversely affect designated uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. DEQ considers the toxicity of the wastewater discharge by requiring whole effluent toxicity (WET) testing when it receives information indicating that toxicity may be present in this effluent. If WET testing results indicate toxicity, effluent limits are necessary.

Insert text here

3.5 Evaluation of Water Quality-Based Effluent Limits for Numeric Criteria

A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits. The calculations for the effluent limits proposed in the draft permit are provided in Appendix C.

Insert text here

3.5.1 Low Flow Design Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Idaho's water quality standards require criteria be evaluated at the following low flow design conditions (See IDAPA 58.01.02.210.03) as defined in Table 10.

Table 10. Low flow design conditions.

Criteria	Flow Condition
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 exceedance of once every 3 years.
3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years.
4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years.
5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years.
6. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years.
7. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows.

DEQ determined critical low flows upstream of the discharge from the insert USGS Station or other source. The estimated low flows for the station are presented in Table 11. Estimated low flows for insert receiving water can be found in Table 11.

Table 11. Estimated low flows for insert receiving water.

Flows	cfs
1Q10	
7Q10	
30B3	
30Q5	
Harmonic Mean	

Insert text here

4 Monitoring Requirements

Idaho regulations IDAPA 58.01.02 and 58.01.25 require that monitoring be included in permits to determine compliance with effluent limitation. Monitoring may also be required to gather data to assess the need for future effluent limitations or to monitor effluent impacts on receiving water quality. Permittees are responsible for conducting the monitoring and reporting the results to EPA and/or IDEQ on monthly DMRs and in annual reports.

4.1 Effluent Monitoring

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

Table 12 presents the proposed effluent monitoring requirements in the draft permit. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Table 12. Effluent monitoring requirements.

Parameter	Units	Minimum Frequency	Sample Type	Sample Location	Report
Insert	Insert	Insert	Insert	Insert	Insert

As a pretreatment publicly owned treatment works (POTW), the City of Insert name or municipality is required to sample influent, primary clarifier effluent, final effluent, and sludge for toxic pollutants in order to characterize the industrial input. Sampling is also done to determine if pollutants interfere with the treatment process or pass-through the plant to the sludge or the receiving water. The Insert name of municipality will use the monitoring data to develop local limits which commercial and industrial users must meet.

4.1.1 Monitoring Changes from the Previous Permit

Monitoring insert type of change for insert parameters has/have been changed relative to the previous permit. Changes in monitoring are based on insert rationale. Table 13, below, summarizes the changes that were made based on insert rationale.

Table 13. Changes in monitoring frequency from previous permit.

Parameter	Permit Expiring **Insert Date**	New Permit
Insert	Insert	Insert

Insert text

4.2 Receiving Water Monitoring

Insert Text to describe receiving water monitoring

Table 14 presents the proposed receiving water monitoring requirements for the draft permit. **Insert permittee name** should continue receiving water monitoring at the established locations. Receiving water monitoring results must be submitted with the DMR.

Table 14. Receiving water monitoring requirements.

Parameter	Units	Frequency	Sample Type	Report
Insert	Insert	Insert	Insert	Insert

5 Special Conditions

5.1 Compliance Schedule

The proposed permit includes a compliance schedule Insert necessary additional text……

5.2 Facility Planning

Insert Text to describe reasoning behind an updated facility plan.

5.3 Nondomestic Waste Management

The permittee has nonsignificant, nondomestic (industrial / commercial) users, which are not subject to the pretreatment standards in 40 CFR 405 through 471, and therefore DEQ does not require an authorized pretreatment program. The permittee must ensure that pollutants from nondomestic wastes discharged to their system do not negatively impact system operation or pass through the facility. The Permittee must not authorize discharges of pollutants that would inhibit, interfere, or otherwise be incompatible with operation of the treatment works, including *interference* with the use or disposal of municipal sludge.

Insert Text to describe nondomestic users or other information.

5.4 Pretreatment

If legal authority needs to be established, include the following if you require the permittee to develop a municipal code. Work with the pretreatment coordinator and the IDEQ regional office WW engineer to determine if you should include in the permit. Edit text to work for your situation. List all identified SIUs.

Any SIU discharging to a POTW requires the POTW to develop a pretreatment program. The following are SIUs which contribute:

Insert Company Name, Address

Special Condition insert pretreatment special condition section requires that the Permittee develop 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). The legal authority must be adopted and enforced by the POTW. 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).

Insert name must develop a pretreatment program to provide more direct and effective control of pollutants discharged to the sanitary sewer, as required under 40 CFR Part 403 . The program must detect and enforce against violations of categorical pretreatment standards promulgated under the federal Clean Water Act.

DEQ will provide technical assistance to Insert name in fulfilling these joint obligations. In particular, it will assist with developing an adequate sewer use ordinance, notification procedures, enforcement guidelines, and developing local limits and inspection procedures.

DEQ delegated authority to Insert permittee name for permitting, monitoring, and enforcement over industrial users discharging to their treatment system to provide more direct and effective control of pollutants. DEQ oversees the delegated Industrial Pretreatment Program to assure compliance with federal pretreatment regulations (40 CFR Part 403) and categorical standards.

As sufficient data becomes available, Insert name must, in consultation with DEQ, reevaluate its local limits in order to prevent pass-through or interference. If any pollutant causes pass-through or interference, or exceeds established sludge standards, Insert name must establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, DEQ may require revision or establishment of local limits for any pollutant that causes a violation of water quality standards or established effluent limits, or that causes whole effluent toxicity.

5.5 Plans

5.5.1 Spill Plan

The permittee shall update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.5.2 Quality Assurance Plan

In accordance with IDAPA 58.01.25.300.05, permittees are required to develop procedures to ensure that the monitoring data submitted is accurate and explain data anomalies if they occur. The permittee is required to update/develop and implement a plan for Insert Purpose and rationale for the plan. The quality assurance plan shall consist of standard operating procedures for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan shall be retained on site and made available to DEQ upon request.

5.5.3 Operation and Maintenance

The permit requires insert permittee name 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 or update and implement an operation and maintenance plan for their facility by insert date. The plan must be retained on site and made available to DEQ upon request.

5.5.4 Emergency Response Plan

The proposed permit requires/does not require this facility to update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.5.5 Best Management Practices Plan

DEQ may specify in a permit the terms and conditions under which waste material may be disposed of. This permit requires/does not require the permittee to update/develop and implement a plan for Insert Purpose and rationale for the plan in order to prevent or minimize the potential for the release of pollutants to waters of the U.S. in Idaho through plant site runoff, spillage or leaks, or erosion. The draft permit contains certain BMP conditions which must be included in the BMP plan. The draft permit requires the permittee to develop a BMP plan within insert plan interval of the effective date of the final permit and implement the plan within insert bmp imp interval of the effective date of the final permit. The plan must be kept on site and made available to the Department upon request.

5.5.6 Phosphorus Management Plan

The proposed permit requires/does not require this facility to update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.5.7 Mercury Minimization Plan

The proposed permit requires/does not require this facility to update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.5.8 Methylmercury Fish Tissue Monitoring Plan

The proposed permit requires/does not require this facility to update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.5.9 Storm Water Management Plan

The proposed permit requires/does not require this facility to update/develop and implement a plan for Insert Purpose and rationale for the plan.

5.6 Sludge / Biosolids

DEQ separates wastewater and sludge permitting. Idaho will obtain authority to issue sludge-only permits in July 2021 (beginning of the state's fiscal year 2022) for the purposes of regulating biosolids. DEQ 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 the requirements of Idaho's Wastewater Rules (IDAPA 58.01.16.480 and 650). The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued. Idaho's Wastewater Rules requires a POTW to have the capability

to process sludge accumulated on-site in preparation for final disposal or reuse. Operations of these sludge processing, storage, and disposal activities must comply with the facility's sludge management plan.

Insert POTW specific text.

Insert Industrial specific text.

5.7 Municipal Lagoon Seepage Testing

Insert rationale for seepage testing.

5.8 Inflow and Infiltration Evaluation

Insert rationale for inflow and infiltration (I/I) evaluation.

5.9 Water Quality Trading

Insert details of the water quality trading options for this facility.

5.10 Decision Rationale for Variances/Waivers

Insert decision rationale for variance or waiver.

6 General Conditions

Sections 4 of the draft permit contains standard regulatory language that must be included in all IPDES permits. DEQ bases the standardized General Conditions on state and federal law and regulations. Because they are based on federal regulations, they cannot be challenged in the context of an individual NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

7 Permit Issuance Procedures

This proposed permit meets all statutory requirements for DEQ to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Idaho. DEQ proposes to issue this permit for a term of 5 years.

Insert alternate text if aligning with a reuse permit cycle.

7.1 Permit Modifications

DEQ may modify a permit before its expiration date only for causes specified in IDAPA58.01.25.201. A modification other than a *minor modification* requires preparing a draft permit that incorporates the proposed changes, preparing a fact sheet, and conducting a public review period. Only the permit conditions subject to the modification will be reopened when a permit is modified. All other conditions of the existing permit will remain in effect. Modifying a permit does not change the expiration date of the original permit.

8 References for Text and Appendices

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.

DEQ. 2016. *Public Participation in the Permitting Process* – needs additional DEQ citation info

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

EPA, 1993. *Guidance Document on Dynamic Modeling and Translators*

Appendix A. Public Involvement Information

[attach printed copy of the Public Notice]

Appendix B. Your Right to Appeal

You have a right to appeal this permit to the Board of Environmental Quality within 28 days of the date of receipt of the final permit. A Petition for Review must be filed with the Department's Hearing Coordinator within twenty eight (28) days after the Department serves notice of the final permit decision under Section 107 (Decision Process). A petition is filed when it is received by the Department's Hearing Coordinator at the address specified in Subsection 204.13.
All documents concerning actions governed by these rules must be filed with the Hearing Coordinator at the following address: Hearing Coordinator, Department of Environmental Quality, 1410 N. Hilton, Boise, ID 83706-1255. Documents may also be filed by FAX at FAX No. (208) 373-0481 or may be filed electronically. The originating party is responsible for retaining proof of filing by FAX. The documents are deemed to be filed on the date received by the Hearing Coordinator. Upon receipt of the filed document, the Hearing Coordinator will provide a conformed copy to the originating party.

Appendix C. Technical Calculations

A. Technology-Based Effluent Limits

Insert appropriate introductory text here.

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) × 8.341[1]

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

Average Monthly Limit = 30 mg/L × ___ mgd × 8.34 = _____ lbs/day

Average Weekly Limit = 45 mg/L × ____ mgd × 8.34 = _____ lbs/day

The concentration and removal rate limits for BOD_5 and TSS are the technology-based effluent limits of 40 CFR 133.102. As explained below, EPA has determined that more-stringent water quality-based effluent limits are necessary for pH, as well as E. coli, TRC, and phosphorus, in order to ensure compliance with water quality standards

B. Reasonable Potential and Water Quality-Based Effluent Limit Calculations

DEQ 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, DEQ compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit. This following section discusses how the maximum projected receiving water concentration is determined

Mass Balance

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

$$C_dQ_d = C_eQ_e + C_uQ_u \qquad \text{Equation 1}$$

where,

C_d = Receiving water concentration downstream of the effluent discharge (that is, the

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

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:

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

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:

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

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). 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.

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

where,

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

and

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

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:

$$C_e = (RPM)(MRC)$$ Equation 10

where MRC = Maximum Reported Concentration

Maximum Projected Effluent Concentration at the Mixing Zone Boundary
Once the maximum projected effluent concentration is calculated, the maximum projected effluent concentration at the mixing zone boundary 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 mixing zone boundary exceeds the most stringent criterion for that pollutant.

Results of Reasonable Potential Calculations
Insert text describing the results of the RPA.

C. WQBEL Calculations
The following calculations demonstrate how the water quality-based effluent limits (WQBELs) in the draft permit were calculated. The draft permit includes WQBELs for insert name of parameters. The following discussion presents the general equations used to calculate the water quality-based effluent limits. The calculations for all WQBELs are summarized in Table ___.

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 mixing zone boundary in the reasonable potential analysis (Equations ___ and ___). To calculate the wasteload allocations, C_d is set equal to the appropriate criterion and the equation is solved for C_e. The calculated C_e is the WLA. Equation ___ is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u$$ 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 discussed in *Guidance Document on Dynamic Modeling and Translators*, referenced in Section 8, the criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT}$$ 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:

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

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:

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

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

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.

Table __, below, details the calculations for water quality-based effluent limits.

EXAMPLE TABLE; replace with appropriate spreadsheet

Pollutant			AMMONIA, Criteria as Total NH3	CHLORINE (Total Residual)
Effluent Data	# of Samples (n)		11	60
	Coefficient of Variation (Cv)		0.6	0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile)		100	75
	Calculated 50th percentile Effluent Conc. (when n>10)			
Mixing Zone Used	Aquatic Life - Acute		1.5	1.5
	Aquatic Life - Chronic			2.1
	Ammonia		2.1	
	Human Health - Non-Carcinogen			5.3
	Human Health - carcinogen			7.5
Receiving Water Data	90th Percentile Conc., µg/L		300.0	0
	Geo Mean, µg/L			
Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	1,395	19
		Chronic	273	11
	Human Health Water and Organism, µg/L		-	-
	Human Health, Organism Only, µg/L		-	-
	Metal Criteria Translator, decimal	Acute	-	-
		Chronic	-	-
	Carcinogen?		N	N

Aquatic Life Reasonable Potential

σ	σ2=ln(CV^2+1)		0.555	0.555
Pn	=(1-confidence level)$^{1/n}$	99%	0.658	0.926
Multiplier	=exp(2.3262σ-0.5σ^2)/exp(invnorm(P_N)σ-0.5σ^2)	99%	2.9	1.6
	Max. conc.(ug/L) at edge of…	Acute	293	79.3
		Chronic	295	58.8
Reasonable Potential? Limit Required?			**YES**	**YES**

Aquatic Life Limit Calculation

n = # samples assumed to calculate AML			30	20
# of Compliance Samples Expected per month			**30**	**20**
LTA Coeff. Var. (CV), decimal	default = 0.6 or calculate from data		0.6	0.6
Permit Limit CV, decimal			0.6	0.6
Waste Load Allocations, ug/L	C_d=(C_rxMZ_a)-C_{sa}x(MZ_a-1)	Acute	1,985.0	29.23
	C_d=(C_rxMZ_c)-C_{sc}*(MZ_c-1)	Chronic	243.9	22.85
Long Term Averages, ug/L	WLAc x exp(0.5σ^2-2.326σ)	Acute	637.3	9.39
	WLAa x exp(0.5σ^2-2.326σ); ammonia n=30	Chronic	190.3	12.05
Limiting LTA, ug/L	used as basis for limits calculation		190.3	9.39
Metal Translator or 1?			1.00	1.00
Average Monthly Limit (AML), ug/L		**95%**	**226**	**12**
Maximum Daily Limit (MDL), ug/L		**99%**	593	**29**
Average Monthly Limit (AML), mg/L			**0.2**	0.012

Maximum Daily Limit (MDL), mgL	**0.6**	0.029
Average Monthly Limit (AML), lb/day	**1**	**0.03**
Maximum Daily Limit (MDL), lb/day	**1**	**0.1**

D. Effluent Limit Calculations for pH

Include this section if the permit includes a mixing zone for pH. The following is just an example.

The following tables demonstrate how appropriate effluent limitations were determined for pH. The pH at the edge of the mixing zone is a function of effluent and ambient pH, temperature, and alkalinity. The critical alkalinity is the minimum for the ambient water and the maximum for the effluent. The critical pHs for the upper pH limit are the maximum effluent pH limit and the 95th percentile ambient pH. The critical pHs for the lower pH limit are the minimum effluent pH limit and the 5th percentile ambient pH. DEQ adjusted the effluent pH in 0.1 standard unit intervals until the pH at the edge of the mixing zone was between 6.5 and 9.0 standard units, as required by the water quality standards. DEQ did not evaluate effluent pHs above 9.0 standard units or below 6.0 standard units, because this is the range of the technology-based effluent limits for pH.

EXAMPLE TABLE; replace with appropriate information

Table __ summarizes the source of input for the calculations:

Input	Source of Input
1. Dilution Factor at Mixing Zone Boundary	
2. Ambient/Upstream/Background Conditions	
Temperature (deg C):	
pH:	
Alkalinity (mg $CaCO_3$/L):	
3. Effluent Characteristics	
Temperature (deg C):	
pH:	
Alkalinity (mg CaCO3/L):	

Calculation of pH of a Mixture of Two Flows

Based on the procedure in the EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. US EPA Office of Water, Washington D.C.)

	Yr. Around Basis	
INPUT	**Min Limit**	**Max Limit**
1. Dilution Factor at Mixing Zone Boundary		
2. Ambient/Upstream/Background Conditions		
Temperature (deg C):		
pH:		
Alkalinity (mg $CaCO_3$/L):		
3. Effluent Characteristics		
Temperature (deg C):		
pH:		
Alkalinity (mg CaCO3/L):		
OUTPUT		
1. Ionization Constants		
Upstream/Background pKa:		
Effluent pKa:		
2. Ionization Fractions		
Upstream/Background Ionization Fraction:		
Effluent Ionization Fraction:		
3. Total Inorganic Carbon		
Upstream/Background Total Inorganic Carbon (mg CaCO3/L):		
Effluent Total Inorganic Carbon (mg CaCO3/L):		
4. Conditions at Mixing Zone Boundary		
Temperature (deg C):		
Alkalinity (mg CaCO3/L):		
Total Inorganic Carbon (mg CaCO3/L):		
pKa:		
RESULTS		
pH at Mixing Zone Boundary:		

Appendix D. Public Comments and Response to Comments

[DEQ will complete this section after the public notice of draft period.]

Appendix E. Facility Maps / Process Schematics

Insert map, diagram, or schematic here.