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 Burley Industrial
Wastewater Treatment Plant

Public Comment Start Date: May 16, 2019
Public Comment Expiration Date: June 17, 2019

Technical Contact: John Drabek
206-553-8257
800-424-4372, ext. 8257 (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:

Regional Administrator
Idaho Department of Environmental Quality
650 Addison Avenue West, Suite 110
Twin Falls, ID 83301

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 Water Division 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, WD 19-C04
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:

EPA Idaho Operations Office
950 W. Bannock Street, Suite 900
Boise, ID 83702
(206) 378-5746

IDEQ Twin Falls Regional Office
650 Addison Avenue West, Suite 110
Twin Falls, ID 83301
(208) 736-2190
Toll-free: (800) 270-1663

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
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
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
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
WD	Water Division
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 #:	ID0000663
Applicant:	City of Burley Industrial Wastewater Treatment Plant
Type of Ownership	Industrial POTW
Physical Address:	999 Railroad Ave Burley, ID 83318
Mailing Address:	1401 Overland Ave Burley, ID 83318
Facility Contact:	Mark Mitton City Administrator mmitton@pmt.org 208-878-2224 ext 2027
Facility Operator:	Dee Hodge Director of Wastewater Operations City of Burley dhodge@pmt.org 208-878-8525
Facility Location:	Latitude: 42.546665º N Longitude: 113.772072º W
Receiving Water	Snake River, Idaho
Facility Outfall	Latitude: 42.550932º N Longitude: 113.770276º W

B. Permit History

The most recent NPDES permit for the City of Burley Industrial Wastewater Treatment Plant (WWTP) was issued on 03/31/2009, became effective on 06/01/2009, and expired on 05/31/2014. An NPDES application for permit issuance was submitted by the permittee on 12/02/2013. The EPA determined that the application was timely and complete. Therefore,

pursuant to 40 CFR 122.6, the permit has been administratively extended and remains fully effective and enforceable.

II. Idaho NPDES Authorization

On June 5, 2018, the EPA approved Idaho's application to administer and enforce the Idaho Pollutant Discharge Elimination System (IPDES) program. IDEQ is taking the IPDES program in phases over a four-year period in accordance with the Memorandum of Agreement (MOA) between IDEQ and the EPA, and subject to EPA oversight and enforcement. IDEQ will obtain permitting authority for individual industrial permits on July 1, 2019. At that time, all documentation required by the permit will be sent to IDEQ rather than to the EPA and any decision under the permit stated to be made by the EPA or jointly between the EPA and IDEQ will be made solely by IDEQ. Permittees will be notified by IDEQ when this transition occurs.

III. Facility Information

A. Treatment Plant Description

Service Area

The City of Burley owns and operates the City of Burley Industrial WWTP located in Burley, ID.

For NPDES permitting purposes, this industrial wastewater treatment facility (IWTP) is considered a Publicly Owned Treatment Works (POTW) which treats wastewaters from the Burley-Heyburn Industrial Park. The term "Publicly Owned Treatment Works" is defined in 40 CFR 403.3(o) as follows:

> "The term *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by Section 212 of the (Clean Water) Act[1], which is owned by a State or municipality (as defined by Section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant[2]. The

[1] The term "treatment works" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature to implement Section 201 of (the Clean Water) Act, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, sewage collection systems, pumping power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land use for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

[2] The term "POTW Treatment Plant" is defined in 40 CFR 403.3(p) as "that portion of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste."

> term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the Indirect Dischargers to and the discharges from such a treatment works."

Because the Burley-Heyburn Industrial Park IWTP is owned by a municipality (the City of Burley, Idaho) and treats industrial wastes of a liquid nature, it fits the definition of a POTW in 40 CFR 403.3. It is therefore subject to the "secondary treatment" requirements of 40 CFR 133.102, and the industrial pretreatment requirements of 40 CFR Part 403. The industrial wastewater treatment plant will not treat domestic wastewater and currently has no future plans to do so. Domestic wastewater from the Burley-Heyburn Industrial Park will be collected and treated by the City of Heyburn's sewer system.

Three facilities currently discharge industrial waste to the facility: Gem State Processing, a potato dehydration facility; High Desert Milk, Inc., a milk processing facility producing powder and milk products; and Gossner Foods, a cheese plant.

A pretreatment program submission entitled Industrial Waste Pretreatment Program, City of Burley, Idaho (August 30, 1984) has been approved. The facility is required to implement its pretreatment program in accordance with the legal authorities, policies, procedures, staffing levels, and financial provisions as described in the approved pretreatment program submission.

Treatment Process

The design flow of the facility is 2.4 mgd. In 2015 the maximum daily flow of the facility was 1.65 mgd and the annual average daily flow was 1.29 mgd. The treatment process consists of primary clarification, anaerobic digestion, chemical phosphorus removal (Chrystalactor® process), secondary treatment aeration basin with bioselector zones for biological nutrient removal, secondary clarification, and sludge dewatering. A schematic of the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A. Because the design flow is greater than 1 mgd, the facility is considered a major facility.

Outfall Description

Outfall 003 discharges to the Snake River approximately 0.5 miles downstream from the Hwy 30 bridge in Burley, Idaho. The submerged outfall is located offshore with a depth of less than 10 ft. The facility discharges via Outfall 003 year-round.

The previous outfalls, Outfalls 001 and 002, were associated with treatment ponds which have been decommissioned. Outfall 003 is the only active and permitted outfall from the City of Burley Industrial WWTP.

Effluent Characterization

To characterize the effluent, the EPA evaluated the facility's application form, discharge monitoring report (DMR) data, and additional data provided by the City of Burley. The effluent quality is summarized in Table 2. Data are provided in Appendix B.

Table 2. Effluent Characterization

Parameter	Maximum	Median	Minimum	Notes
Nitrogen, Ammonia	213 mg/L	1.92 mg/L	0.01 mg/L	Daily Max
Nitrite + Nitrate (as N)	182 mg/L	144 mg/L	4.46 mg/L	Quarterly
E. coli	8439 #/100mL	3441 #/100mL	162 #/100mL	Instantaneous Max
pH	8.06	-	6.19	Daily Max / Min
Temperature	28 ºC	21 ºC	8.4 ºC	Daily Max
BOD_5	1002 mg/L	17 mg/L	3 mg/L	Weekly Average
TSS	2340 mg/L	39 mg/L	10 mg/L	Weekly Average
Phosphorus, Total	62 mg/L	32 mg/L	11 mg/L	Weekly Average

Source: City of Burley Industrial WWTP DMRs from August 2011 – July 2016

Compliance History

The EPA reviewed the previous five years of effluent monitoring data (August 2011 – July 2016) from Discharge Monitoring Reports (DMRs) submitted by the City of Burley Industrial WWTP. A summary of effluent violations is provided in Table 3.

Table 3. Summary of Effluent Violations

Parameter	Limit	Units	Number of Instances	Violation Code
BOD_5	Weekly Average	mg/L	10	E90
BOD_5	Weekly Average	lbs/day	6	E90
BOD_5	Monthly Average	mg/L	10	E90
BOD_5	Monthly Average	lbs/day	5	E90
BOD_5	Percent Removal	%	1	E90
Floating solids, waste, or visible foam – visual	Daily Max	Visual	2	E90
Nitrogen, Ammonia	Monthly Average	lbs/day	1	E90
Phosphorus, Total	Weekly Average	lbs/day	4	E90
Phosphorus, Total	Monthly Average	lbs/day	7	E90
Total Suspended Solids	Weekly Average	mg/L	21	E90
Total Suspended Solids	Weekly Average	lbs/day	9	E90
Total Suspended Solids	Monthly Average	mg/L	22	E90
Total Suspended Solids	Monthly Average	lbs/day	9	E90
Total Suspended Solids	Percent Removal	%	2	E90

Source: City of Burley Industrial WWTP DMRs from August 2011 – July 2016

The EPA conducted an inspection of the facility on 03/08/2016. The inspection encompassed the wastewater treatment process, records review, operation and maintenance, and the collection system. The inspection noted areas of concern in regards to reporting accuracy and the violations summarized in Table 3. A letter from the facility dated 07/18/2016 provided the facility's response to the inspection, including updated and improved reporting, DMR calculations, and plant operations.

On June 2, 2015 the EPA entered into a consent agreement and final order with the facility to resolve alleged effluent limit violations. The facility agreed to pay a penalty of $14,000. Additional compliance information for this facility, including compliance with other environmental statutes, is available on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is: https://echo.epa.gov/detailed-facility-report?fid=110007513002

IV. Receiving Water

In drafting permit conditions, the 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 water that impact that analysis.

A. Receiving Water

This facility discharges to the Snake River in the City of Burley, Idaho. The outfall is located 0.5 miles downstream of Highway 30 Bridge in Burley, Idaho.

B. Designated Beneficial Uses

This facility discharges to the Snake River in the Lake Walcott Subbasin (HUC 17040209), Water Body Unit S-1. At the point of discharge, the Snake River is protected for the following designated uses (IDAPA 58.01.02.130.11.US-1):

- warm water aquatic life
- primary contact recreation

The permit must include any effluent limitations necessary to meet the water quality standards. See Part IV below for a summary of effluent limitations included in this permit.

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

C. Water Quality

The water quality for the receiving water is summarized in Table 4.

Table 4. Receiving Water Quality Data

Parameter	Units	Percentile	Value	Source
Temperature	°C	95th	20.8	Application
pH	Standard units	5th – 95th	8.1 – 8.8	Application
Hardness	mg/L	5th – 95th	157 – 210	USGS
Ammonia	mg/L	maximum	0.22	Application

Sources: City of Burley Industrial WWTP Permit Application submitted 12/02/2014 & USGS Station 13081500

D. Water Quality Limited Waters

The State of Idaho's 2014 Integrated Report Section 5 (section 303(d)) lists the Snake River, from the Heyburn/Burley Bridge to the Milner Dam, as impaired for phosphorus.

On June 28, 2000, the EPA approved the IDEQ's Lake Walcott Subbasin Assessment and Total Maximum Daily Load (hereafter referred to as the TMDL). The TMDL included wasteload allocations (WLAs) for phosphorus and sediment for the facility and listed oil and grease as a pollutant of concern. The TMDL did not assign a WLA for oil and grease. As previously noted, the receiving water is only listed as impaired for phosphorus. The sediment TMDL is intended to be protective of the water quality standards and is known as an informational TMDL. The EPA does not approve informational TMDLs because the receiving water is not impaired for the pollutant. Therefore, the relevant TMDL for permitting purposes is the EPA-approved phosphorus TMDL. The phosphorus WLA for the facility is 359 lbs/day (Table 47c of the TMDL). As explained in more detail below, the draft permit proposes effluent limits consistent with the assumptions and requirements of the phosphorus WLA.

E. Low Flow Conditions

Critical low flows for the receiving water are summarized in Table 5.

Table 5. Critical Flows in the Snake River

Flows	Annual Flow (cfs)	Seasonal Low Flows Oct – May (cfs)	Seasonal High Flows Jun – Sep (cfs)
1Q10	343	343	3200
7Q10	338	341	3590
30Q10	-	347	4840
30Q5	405	419	5200
Harmonic Mean	1588	1116	8383

Source: USGS station 13081500 electronic flow data from April 1996 – September 2016.
Station is located 18 miles upstream of Burley, ID

Low flows are defined in Appendix D, Part C.

In order to be consistent with the City of Burley Municipal WWTP NPDES Permit the high flow months were redefined from May – September in the previous permit to June – September in the draft permit. Both the City of Burley Municipal and Industrial facilities discharge to the same receiving water, the Snake River, with outfalls less than 1 mile apart.

Effluent Limitations and Monitoring

Table 6, below, presents the existing effluent limits and monitoring requirements in the City of Burley Industrial WWTP Permit.

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

Table 6. Existing Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent limits			Monitoring Requirements		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Monitoring Location	Monitoring Frequency	Sample Type
Flow	mgd	Report	—	Report	Influent and as specified in I.B.4.	As specified in I.B.4.	
BOD_5 (Monthly Average Effluent Flow < 0.44 mgd)	mg/L	Report	Report	—	Influent and as specified in I.B.4.	2/week	24-Hour Composite
	lb/day	110	165	—			Calculation [6]
BOD_5 (Monthly Average Effluent Flow ≥ 0.44 mgd)	mg/L	30	45	—	Influent and as specified in I.B.4.	2/week	24-Hour Composite
	lb/day	600	901	—			Calculation [6]
	% Removal	85% (min.)	—	—	See I.B.6.	1/month	Calculation
TSS (Monthly Average Effluent Flow < 0.55 mgd)	mg/L	Report	Report	—	Influent and as specified in I.B.3.a.	2/week	24-Hour Composite
	lb/day	138	207	—			Calculation [6]
TSS (Monthly Average Effluent Flow ≥ 0.55 mgd)	mg/L	30	45	—	Influent and as specified in I.B.3.a.	2/week	24-Hour Composite
	lb/day	600	901	—			Calculation [6]
	% Removal	85% (min.)	—	—	% Removal	1/month	Calculation
pH	s.u.	6.0 – 9.0 at all times			As specified in I.B.3.a.	5/week	Grab
Total Phosphorus as P	mg/L	Report	Report	Influent and as specified in I.B.4.		1/week	24-Hour Composite
	lb/day	359	539				Calculation [6]
Total Ammonia as N_4 (Oct. – Apr.)	mg/L	Report	—	Report	Influent and as specified in I.B.4.	2/week	24-Hour Composite
	lb/day	292	—	658			Calculation [6]
Total Ammonia as N_4 (May – Sept.)	mg/L	Report	—	Report	Influent and as specified in I.B.4.	2/week	24-Hour Composite
	lb/day	1759	—	3966			Calculation [6]
Oil and Grease	Visual	No Visible Sheen			As specified in I.B.3.a.	1/month	Visual
Oil and Grease	mg/L	Report	—	Report	As specified in I.B.3.a.	2/year[5]	Grab
Floating, Suspended or Submerged Matter	Visual	Narrative Limitation (see I.B.10.)			As specified in I.B.3.a.	1/month	Visual

Temperature	ºC	Report	—	32	Influent and as specified in I.B.3.a.	5/week	Grab
Alkalinity	mg/L as $CaCO_3$	Report	—	Report	As specified in I.B.3.a.	2/year[5]	24-Hour Composite
Dissolved Oxygen	mg/L	Report	—	Report	As specified in I.B.3.a.	1/month	Grab
***E. Coli* Bacteria**	#/100 ml	Note 1	—	Note 2	As specified in I.B.3.a.	5/month	Grab
Hardness	mg/L as $CaCO_3$	Report	—	Report	As specified in I.B.3.a.	2/year[5]	24-Hour Composite
Nitrate + Nitrite as N	mg/L	Report	—	Report	As specified in I.B.4.	2/year[5]	24-Hour Composite
Total Nitrate as N	mg/L	Report	—	Report	As specified in I.B.4.	2/year[5]	24-Hour Composite
Total Kjeldahl Nitrogen	mg/L	Report	—	Report	As specified in I.B.4.	2/year[5]	24-Hour Composite
Total Dissolved Solids	mg/L	Report	—	Report	As specified in I.B.3.a.	2/year[5]	24-Hour Composite
Whole Effluent Toxicity	TUc	See I.C.			As specified in I.B.3.a.	See I.C.2.a.	24-Hour Composite
Expanded Effluent Testing	See I.B.12. and Note 3				As specified in I.B.3.a.	3x/5 years[3]	—

Notes:
1. The permittee must report the monthly geometric mean *E. Coli* concentration.
2. The permittee must report the maximum single-sample value for the month.
3. The permittee must report these effluent data with its application for renewal of this NPDES permit.
4. Twenty-four hour reporting is required in case of a maximum daily limit violation.
5. Results must be reported on the June and December DMRs.
6. Loading (in pounds per 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

Table 7. Draft Permit - Effluent Limits and Monitoring Requirements

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) (Monthly Average Effluent Flow <0.44)	mg/L	Report	Report	--	Influent and Effluent	2/week	24-hour composite
	lbs/day	110	165	--			Calculation[1]
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow 0.44 to 1.67)	mg/L	30	45	--	Influent and Effluent	2/week	24-hour composite
	lbs/day	419	628.5	--			Calculation[1]
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow >1.67)	mg/L	30	45	--	Influent and Effluent	2/week	24-hour composite
	lbs/day	600	901	--			Calculation[1]
BOD_5 Percent Removal (Monthly Average Effluent Flow >1.67)	%	85 (minimum)	--	--	--	1/month	Calculation[2]
Total Suspended Solids (TSS)	mg/L	25	37.5	--	Influent and Effluent	2/week	24-hour composite
	lbs/day	500	750	--			Calculation[1]
E. coli [4]	CFU/ 100 ml	126	--	406 (instant. max) [5,13]	Effluent	5/month	Grab
Total Residual Chlorine (TRC)[3]	µg /L	214	--	429[5,6]	Effluent	1/week	Grab
	lbs/day	4.28	--	8.59[5]			Calculation[1]
pH[8]	std units	Between 6.5 – 9.0			Between 6.5 – 9.0	5/week[7]	Grab
Total Ammonia (as N) October 1 – May 31	mg /L	13	--	41.7[5]	Effluent	2/week	24-hour composite
	lbs/day	260	--	658[5]			Calculation[1]
Total Ammonia (as N) June 1 – September 30	mg /L	Report	--	Report	Effluent	2/week	24-hour composite
	lbs/day	1759	--	3966[5]			Calculation[1]
Total Phosphorus (as P)	mg /L	Report	Report	--	Effluent	1/week	24-hour composite
	lbs/day	359	539	--			Calculation[1]
Temperature	ºC	--	Report	32	Effluent	Continuous	Meter

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Floating, Suspended, or Submerged Matter	--	See Paragraph I.B.2 of this permit				1/month	Visual Observation
		Report Parameters					
Flow	mgd	Report	--	Report	Effluent	continuous	Meter
Dissolved Oxygen	mg/L	Report	—	Report	Effluent	1/month	Grab
Nitrate + Nitrite (as N)	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Alkalinity[8]	mg/L as $CaCO_3$	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Total Hardness[8]	mg/L as $CaCO_3$	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Dissolved Organic Carbon[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Conductivity[8]	umhos/ cm	Report	--	Report	Effluent	Monthly[14]	Meter
Chloride[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Potassium[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Sodium[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Sulfate[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Calcium[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Magnisium[8]	mg/L	Report	--	Report	Effluent	Monthly[14]	24-hour composite
Arsenic, Total Recoverable	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Cadmium, Total Recoverable	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Chromium VI, Dissolved	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Copper, Total Recoverable[8]	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Nickel, Total Recoverable	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Zinc, Total Recoverable	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Phenol	mg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Methyl Bromide	µg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Bis (2-ethylhexyl) Phthalate	µg/L	Report	--	Report	Effluent	Quarterly[12]	24-hour composite
Whole Effluent Toxicity (WET)	See Part I.D. of this permit				Effluent	4/Oct – May[9]	24-hour composite
Effluent Testing for Permit Renewal							
Permit Application Effluent Testing Data[10]	--				Effluent	1/year	--
Permit Application Expanded Effluent Testing[11]	--				Effluent	1/year[11]	--

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. Total Residual Chlorine (TRC) monitoring is required only during months the facility uses TRC in the treatment process. For these months, the facility shall put "No Discharge" on the DMR.
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 this 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.3 and Part III.G of this permit.
6. The minimum level (ML) for chlorine is 50 µg/L for this parameter. For purposes of calculating the monthly averages, see Paragraph I.B.7. of this permit.
7. Samples must be taken on different days.
8. Samples for temperature, pH, dissolved organic carbon, alkalinity, conductivity, dissolved organic carbon, total hardness, chloride, potassium, nickel, cadmium, zinc, chromium VI, sodium, sulfate, calcium, magnesium and copper must be collected on the same day.
9. Samples must be taken once during each of the following time periods: October 1st – November 30th; December 1st – January 31st; February 1st – March 31st; and, April 1st – May 31st, for a total of 4 samples per October – May time period.
10. Effluent Testing Data - See NPDES Permit Application Form 2A, Part B.6 for the list of pollutants to be included in this testing. The Permittee must use sufficiently sensitive analytical methods in accordance with Part I.B.5 of this permit.
11. Expanded Effluent Testing - See NPDES Permit Application Form 2A, Part D for the list of pollutants to be included in this testing. Testing must be conducted annually during alternating two-month time periods. The expanded effluent testing must occur on the same day as a whole effluent toxicity testing. The Permittee must use sufficiently sensitive analytical methods in accordance with Part I.B.5 of this permit.
12. Quarters are defined as January 1st – March 31st; April 1st – June 30th; July 1st – September 30th; and, October 1st – December 31st.
13. The permittee must notify the IDEQ within 24 hours if the single sample maximum for *E. coli* bacteria exceeds 235/100 ml between May 1st and September 30th.
14. Sampling must continue for a minimum of 24 months from the effective date of the permit.

Summary of Effluent Limit Changes

The draft permit contains new effluent limits for the following parameters:

- *E. coli*
- TRC

The draft permit contains revised effluent limits for the following parameters:

- BOD_5
- TSS
- pH
- Total Ammonia (as N)

F. 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 water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

G. Pollutants of Concern

Pollutants of concern are those that either have technology-based limits or may need water quality-based limits. The EPA identifies pollutants of concern for the discharge based on those which:

- Have a technology-based limit
- Have an assigned wasteload allocation (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 DMR 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
- Total Residual Chlorine (TRC)
- pH
- Temperature

- Oil and Grease
- Ammonia
- Nitrate+Nitrite (as N)
- Phosphorus
- Arsenic
- Cadmium
- Chromium (Hex)
- Copper
- Nickel
- Zinc
- Phenol
- Methyl Bromide
- Bis (2-ethylhexl) phthalate

H. Technology-Based Effluent Limits

Federal Secondary Treatment Effluent Limits for POTWs

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 for POTWs

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[3]

Since the design flow for this facility is 2.4 mgd, the technology based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 2.4 mgd × 8.34 = 600 lbs/day

Average Weekly Limit = 45 mg/L × 2.4 mgd × 8.34 = 901 lbs/day

Special Considerations for Industrial Wastes

The City of Burley Industrial WWTP is a POTW which primarily treats industrial waste. The regulations implementing the secondary treatment technology-based limits for POTWs allow the effluent limits to be adjusted upward to account for industrial wastes from industrial categories (40 CFR 133.103(b)). This applies if the industrial technology-based effluent limits (TBELs) for BOD_5 and TSS are less stringent than those described in 40 CFR 133.102. The TBELs should be calculated as if those industries were to discharge waste directly to Waters of the United States.

The City of Burley Industrial WWTP currently receives industrial waste from two major categories of dischargers: cheese processing facilities and potato processing facilities. The indirect-discharging facilities would be considered New Sources and would be subject to New Sources Performance Standards (NSPS) effluent limits if they were to discharge effluent directly to Waters of the United States. Therefore, TBELs should be calculated using the NSPS Effluent Limit Guidelines (ELGs).

Calculating Technology Based Effluent Limits based on Effluent Limit Guidelines

The EPA uses the building block approach to calculate TBELs for industrial facilities where multiple industrial categories are operating. The EPA calculates TBELs by summing the calculated TBELs for BOD_5 and TSS for each individual industrial category. This process is described in the U.S. EPA NPDES Permit Writers Manual (EPA 833-B-96-003).

ELGs for some of the industries contributing wastewater to the City of Burley Industrial WWTP are production based. 40 CFR 122.45(b)(2) states that, for dischargers currently operating, effluent limitations that are based on production shall be based on a reasonable measure of actual production at the facility. For new dischargers not currently operating, the production-based limits shall be based on projected production.

The production rates of the industries discharging wastewater to the facility are expected to increase over the term of the permit. EPA has calculated production based limits using the average production rate projected over the permit term.

ELGs for dairy products processing are based on BOD_5 input pursuant to 40 CFR 405, Subpart F. The NSPS ELGs appear in 40 CFR 405.65. Two facilities, Gossner Cheese and High Desert Milk, produce products covered under this ELG and discharge their wastestreams to the City of Burley Industrial WWTP.

[3] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

ELGs for potato products processing are based on lbs of raw material input pursuant to 40 CFR 407, Subpart E. The NSPS ELGs appear in 40 CFR 407.55. One facility, Gem State Potatoes, produces a product covered under this ELG and discharges their wastestream to the City of Burley Industrial WWTP.

New Sources Performance Standards Limits for Dehydrated Potatoes

According to information provided by the permittee, Gem State Potatoes is expected to average 2,191,509 lbs/day of potatoes as raw material input during the permit term. Therefore, the average monthly TBELs for dehydrated potatoes are as follows:

BOD_5:

2,191,509 lbs potatoes/day input × 0.17 lbs BOD_5 / 1,000 lbs potatoes input = 373 lbs/day BOD_5

TSS:

2,191,509 lbs potatoes/day input × 0.55 lbs TSS / 1,000 lbs potatoes input = 1,205 lbs/day TSS

New Sources Performance Standards Limits for Natural and Processed Cheese

According to information provided by the permittee, Gossner Cheese is expected to average 137,931 lbs/day of BOD_5 input from natural and processed cheese during the permit term. Therefore, the average monthly TBELs for natural and processed cheese are as follows:

BOD_5:

137,931 lbs/day BOD_5 input × 0.008 lbs BOD_5 / 100 lbs BOD_5 input = 11 lbs/day BOD_5

TSS:

137,931 lbs/day BOD_5 input × 0.010 lbs TSS / 100 lbs BOD_5 input = 13.8 lbs/day TSS

New Sources Performance Standards Limits for Dry Milk

According to information provided by the permittee, High Desert Milk is expected to average 186,956 lbs/day of BOD_5 input from dry milk during the permit term. Therefore, the average monthly TBELs for dry milk are as follows:

BOD_5:

186,956 lbs/day BOD_5 input × 0.018 lbs BOD_5 / 100 lbs BOD_5 input = 33.6 lbs/day BOD_5

TSS:

186,956 lbs/day BOD_5 input × 0.023 lbs TSS / 100 lbs BOD_5 input = 43 lbs/day TSS

New Sources Performance Standards Limits for Butter

According to information provided by the permittee, High Desert Milk is expected to average 22,012 lbs/day of BOD_5 input from butter during the permit term. Therefore, the average monthly TBELs for butter are as follows:

BOD_5:

22,012 lbs/day BOD_5 input × 0.008 lbs BOD_5 / 100 lbs BOD_5 input = 1.76 lbs/day BOD_5

TSS:

22,012 lbs/day BOD_5 input × 0.010 lbs TSS / 100 lbs BOD_5 input = 2.2 lbs/day TSS

Building Block Limits

The building block average monthly limits for this facility (the sum of the average monthly BOD_5 and TSS limits applicable to the industrial dischargers) are as follows:

BOD_5 Average Monthly Limit:

373 lbs/day (dehydrated potatoes, Gem State Potatoes)
+ 11 lbs/day (cheese, Gossner Cheese)
+ 33.6 lbs/day (dry milk, High Desert Milk)
+ 1.76 lbs/day (butter, High Desert Milk)
= 419 lbs/day

TSS Average Monthly Limit:

1205 lbs/day (dehydrated potatoes, Gem State Potatoes)
+ 13.8 lbs/day (cheese, Gossner Cheese)
+ 43 lbs/day (dry milk, High Desert Milk)
+ 2.2 lbs/day (butter, High Desert Milk)
= 1264 lbs/day

Average Weekly Limits

NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. For TBELs, the AWL is calculated to be 1.5 times the AML. Therefore, the AWLs are as follows:

BOD_5 Average Weekly Limit:

419 lbs/day × 1.5 = 628.5 lbs/day

TSS Average Weekly Limit:

1264 lbs/day × 1.5 = 1896 lbs/day

Final Technology Based Effluent Limits

The EPA used the calculated industrial building block TBELs in lieu of POTW secondary treatment effluent limits whenever the building block limits are less stringent, pursuant to 40 CFR 133.103(b) for the facility's current design flow of 2.4 mgd.

The POTW secondary treatment effluent limits are based on flow and calculated as follows:

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

Set the *Mass based limit (lb/day)* equal to the calculated industrial building block TBEL and solve for flow. The calculation is as follows:

Design flow (mgd) = Industrial mass based limit (lb/day) ÷ [concentration limit (mg/L) × 8.34]

For BOD_5 the calculated *Industrial mass based limit (lb/day)* is 419 lbs/day and the POTW secondary treatment effluent limit is 30 mg/L, both calculated as an AML. Solving for design flow, the calculation is as follows:

Design flow = 419 (lbs/day) ÷ [30 (mg/L) × 8.34]

Design flow = 1.67 mgd

For example, at the design flow of 2.4 mgd the monthly effluent limitation based on secondary treatment is

30 mg/L x 2.4 mgd x 8.34 = 600 lbs/ day

The limit based on the building block new source performance standard is

419 lbs per day for all flows

The building block Industrial ELGs are compared to the flow dependent POTW secondary limits below:

Flow mgd	Industrial Building Block TBELs (Independent of Flow) lbs/day	POTW Secondary Standards lbs/day
2.4 (Design)	419	600
2.0	419	500
1.67	419	419
1.0	419	250

The point at which the industrial mass based limit for BOD_5 is equal to the POTW secondary treatment effluent limit is at a theoretical design flow of 1.67 mgd. Therefore, at actual effluent flows below 1.67 mgd the industrial mass based limits are less stringent, and at actual effluent flows above 1.67 mgd the POTW secondary treatment standards are less stringent. Effluent flows below and above 1.67 mgd could be expected from a facility with a design flow of 2.4 mgd (the facility's current design flow), therefore both limits are included in the draft permit.

For TSS the calculated Industrial mass based limit (lb/day) is 1264 lbs/day and the POTW secondary treatment effluent limit is 30 mg/L, both calculated as an AML. Solving for design flow, the calculation is as follows:

Design flow = 1264 lbs/day ÷ [30 mg/L × 8.34]

Design flow = 5.05 mgd

The point at which the industrial mass based limit for TSS is equal to the POTW secondary treatment effluent limit is at a theoretical design flow of 5.05 mgd. Therefore, at actual effluent flows below 5.05 mgd the industrial mass based limits are less stringent, and at

actual effluent flows above 5.05 mgd the POTW secondary treatment standards are less stringent.

Flow mgd	Industrial Building Block TBELs (Independent of Flow)	POTW Secondary Standards
2.4 (Design)	1264	600
2.0	1264	500
1.0	1264	250

Effluent flows above 5.05 mgd are not expected from a facility with a design flow of 2.4 mgd (the facility's current design flow). Therefore, only the industrial mass based limits for below 5.05 mgd are included in the draft permit.

Table 9 summarizes the technology based effluent limits for BOD_5 and TSS calculated for the draft permit.

Table 9. Final Technology Based Effluent Limits Summary

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow <1.67)	mg/L	Report	Report
	lbs/day	419	628.5
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow >1.67)	mg/L	30	45
	lbs/day	600	901
BOD_5 Percent Removal (Monthly Average Effluent Flow >1.67)	%	85 (minimum)	--
Total Suspended Solids (TSS)	mg/L	Report	Report
	lbs/day	1264	1896

Chlorine

Chlorine is often used to disinfect wastewater prior to discharge. The City of Burley Industrial WWTP does not currently use chlorine disinfection. However, the permit contains a new water quality-based effluent limit requiring the facility to meet new *E. coli* limits, and the facility may disinfect using chlorine in the future. Therefore, the draft permit includes chlorine limits and monitoring that apply if the facility uses chlorine in the treatment process within the permit term.

A 0.5 mg/L average monthly limit for chlorine is derived from standard operating practices. The Water Pollution Control Federation's *Chlorination of Wastewater* (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate

disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time. Therefore, a wastewater treatment plant that provides adequate chlorine contact time can meet a 0.5 mg/L total residual chlorine limit on a monthly average basis. In addition to average monthly limits (AMLs), NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. For technology-based effluent limits, the AWL is calculated to be 1.5 times the AML, consistent with the "secondary treatment" limits for BOD_5 and TSS. This results in an AWL for chlorine of 0.75 mg/L.

Since the federal regulations at 40 CFR 122.45 (b) and (f) require limitations for POTWs to be expressed as mass based limits using the design flow of the facility, mass based limits for chlorine are calculated as follows:

Monthly average Limit = 0.5 mg/L x 2.4 mgd x 8.34 = 10 lbs/day

Weekly average Limit = 0.75 mg/L x 2.4 mgd x 8.34 = 15 lbs/day

A Water Quality-Based Effluent Limit (WQBEL) was also calculated for chlorine (See Section III.I). Because the calculated WQBEL is more restrictive than the calculated TBEL for chlorine, and because the permittee has the reasonable potential to cause or contribute to an excursion above the water quality standard for chlorine, the WQBEL is included in the permit.

I. Water Quality-Based Effluent Limits

Statutory and Regulatory Basis

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. 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)).

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation 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 water quality standards.

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 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 to 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 Water Quality Standards at IDAPA 58.01.02.060 provides Idaho's mixing zone policy for point source discharges. In the State 401 Certification, the IDEQ proposes to authorize mixing zones. The proposed mixing zones are summarized in Table 10. The EPA also calculated dilution factors for year round and seasonal critical low flow conditions. All dilution factors were calculated with the effluent flow rate set equal to the current design flow of 2.4 mgd.

A mixing zone of 25% is proposed for ammonia for the period of reasonable potential which is the low flow season of October 1 through April 30. The minimum mixing zone for no reasonable potential is 15 %. A mixing zone of 5% is proposed for Bis (2-ethylhexyl Phthalate). A mixing zone of 0% is proposed for arsenic, cadmium, chromium, copper, zinc, phenol, methyl bromide, and nitrate/nitrite.

The City of Burley also operates a municipal POTW with an outfall approximately 2000 ft downstream from the City of Burley Industrial WWTP. IDEQ has authorized mixing zones for this outfall under the draft NPDES permit for that facility (ID0020095). The EPA evaluated the potential for overlap of the two mixing zones. Pollutants with proposed mixing zones in both permits are ammonia, arsenic, chromium, and copper.

The mixing zones for arsenic, chromium, and copper are limited to 5% of the critical low flow of the receiving water. Given this small mixing zone, the potential for overlap is small.

Additional data is required in order to verify that the mixing zones for ammonia for the two facilities do not overlap. The CORMIX model which models mixing zones requires data that was not available, including receiving water depth and width. The EPA has included a provision in the draft permit to collect the necessary data in order to run the CORMIX model for the next permit reissuance. The WQBELs for ammonia in the draft permit and are more stringent or as stringent as in the existing permit.

Table 10. Mixing zones and associated Dilution Factors

Criteria Type	Critical Low Flow Type	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Acute Aquatic Life	1Q10	343	25%	24.1
Acute Aquatic Life	1Q10	343	5%	5.6
Chronic Aquatic Life	7Q10	338	25%	23.8
Chronic Aquatic Life	7Q10	338	5%	5.6
Chronic Aquatic Life (Ammonia) (Oct – May)	30Q10	347	25%	24.4
Chronic Aquatic Life (Ammonia) (Jun – Sep)	30Q10	4840	15%	196.5
Human Health Noncarcinogen	30Q5	405	25%	28.3
Human Health Noncarcinogen	30Q5	405	5%	6.5
Human Health Carcinogen	Harmonic Mean Flow	1588	25%	107.9
Human Health Carcinogen	Harmonic Mean Flow	1588	5%	22.4

The reasonable potential analysis and water quality-based effluent limit calculations were based on mixing zones shown in Table 10. 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. The Appendix includes calculations for the current facility design flow of 2.4 mgd.

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. Table 11, below, details the equations used to determine water quality criteria for ammonia.

Table 11. 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):	10.5
2. Receiving Water pH:	8.80
3. Is the receiving water a cold water designated use	No
4. Are non-salmonid early life stages present or abse	Absent
OUTPUT	
Total ammonia nitrogen criteria (mg N/L):	
Acute Criterion (CMC)	**1.84**
Chronic Criterion (CCC)	**0.85**

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):	20.9
2. Receiving Water pH:	8.60
3. Is the receiving water a cold water designated use	No
4. Are non-salmonid early life stages present or abse	Absent
OUTPUT	
Total ammonia nitrogen criteria (mg N/L):	
Acute Criterion (CMC)	**2.65**
Chronic Criterion (CCC)	**0.61**

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

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet 1.45 \cdot 10^{0.028(25-T)})$$

Ammonia data from the facility were available from DMRs from August 2011 – August 2017. A summary of this data is available in Appendix B. Ammonia data collected prior to September 2013 were collected prior to the installation and optimization of wastewater equipment designed to treat ammonia. Therefore, the EPA evaluated all data from September 2013 – August 2017 in order to determine reasonable potential for ammonia.

The EPA evaluated the reasonable potential for the WWTP to exceed water quality criteria for ammonia for two seasons, during the period of low flows in the receiving water (October through May) and during the period of high flows (June through September).

A reasonable potential calculation showed that the City of Burley Industrial WWTP discharge would have the reasonable potential to cause or contribute to a violation of the water quality criteria for ammonia from October through May (during the low flow season). Therefore, the draft permit must include water quality-based effluent limits for October through May. See Appendix D for reasonable potential and effluent limit calculations.

A reasonable potential calculation showed that the City of Burley Industrial WWTP discharge would not have the reasonable potential to cause or contribute to a violation of the water quality criteria for ammonia from June through September (during the high flow season). See Appendix D for reasonable potential calculations.

The calculated effluent limits for ammonia are less stringent than the existing limits for ammonia, therefore, an antibacksliding analysis has been performed (See Section III.J of this Fact Sheet). Final effluent limits for ammonia are consistent with the prohibition against backsliding and are outlined in Table 14 of this Fact Sheet.

The draft permit requires that the permittee monitor the receiving water for ammonia, pH, and temperature in order to determine the applicable ammonia criteria for the next permit reissuance.

pH

The Idaho water quality standards at IDAPA 58.01.02.250.01.a, require pH values of the river to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. Effluent pH data were compared to the water quality criteria. The pH range of the effluent is well within the State's water quality criterion of 6.5 to 9.0 standard units.

Dissolved Oxygen (DO) and BOD_5

IDAPA 58.01.02.250.04 require the level of DO in a receiving water designated as warm water aquatic life to exceed 5 mg/L at all times. The existing permit requires the facility to monitor for DO monthly.

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 BOD_5 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 draft permit includes limits for BOD_5 based on secondary treatment. Typically, secondary treatment limits for BOD_5 ensure that the effluent from POTWs will not cause or contribute to violations of the water quality standard for DO. However, the City of Burley Industrial WWTP includes BOD_5 limits based on secondary treatment standards for POTWs as well as ELGs for industrial discharges (See Section IV.H Technology Based Effluent Limits).

Additional information is required to confirm that the discharge does not have the probability to cause or contribute to an excursion above water quality limits for DO in the receiving water. Therefore, the draft permit requires that the permittee monitoring DO in the effluent and collect receiving water width and depth data. This information can be used to model the depletion of oxygen in the receiving water via a Streeter-Phelps type analysis.

The draft permit does not allow for a loading increase in BOD_5. BOD_5 loading limits are unchanged. The draft permit retains the effluent monitoring requirement for DO.

Chlorine

The Idaho state water quality standards 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. A reasonable potential calculation showed that the discharge from the facility would have the reasonable potential to cause or contribute to an excursion of the water quality criteria for chlorine. Therefore, the draft permit contains a water quality-based effluent limit. The proposed limit is conditional upon the use of chlorine as a disinfectant. See Appendix D.

Phosphorus

The EPA-approved Lake Walcott Subbasin Assessment, Total Maximum Daily Load and Implementation Plan (Table 47c). (DEQ, 2000) establishes wasteload allocations for TSS and TP. The TMDL established a TP load allocation (WLA) of 359 lbs/day for the J.R. Simplot Company. Simplot ceased operation in 2003 and EPA terminated the NPDES permit; however, one year later, the plant and existing phosphorus WLA transferred to the City of Burley when they requested NPDES coverage for their industrial operations. This phosphorus allocation was first utilized in the 2005 Burley Industrial NPDES permit and is incorporated into the 2009 discharge permit as well as the current permit. These WLAs are designed to ensure the Snake 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 Burley Industrial WWTP permit are set at levels that comply with these wasteload allocations.

Federal regulations state that NPDES permits must include effluent limits consistent with the assumptions and requirements of any available WLA in a TMDL for the discharge prepared by the State and approved by the EPA. (*See* 40 CFR 130.7 (40 CFR 122.44(d)(1)(vii)(A)). Therefore, the permit includes an Average Monthly Limit of 359 lbs/day consistent with the TMDL.

NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. The AWL is calculated to be 1.5 times the AML. Therefore, the AWL for Total Phosphorus is:

Total Phosphorus AWL = 359 lbs/day × 1.5 = 539 lbs/day AWL

The Total Phosphorus limits are unchanged from the previous permit.

Sediment / Total Suspended Solids

The 2000 Lake Walcott TMDL listed sediment as a pollutant of concern. In the EPA's letter dated July 3, 2000, the EPA only approved the 2000 Lake Walcott TMDL for total phosphorus. Since the Snake River was not impaired for sediment or oil and grease at the time, the EPA did not approve this portion of the TMDL. Federal regulations state that NPDES permits must include effluent limits consistent with the assumptions and requirements of any available WLA in a TMDL for the discharge prepared by the State and approved by the EPA. (See 40 CFR 130.7 (40 CFR 122.44(d)(1)(vii)(A)).

In order to determine reasonable potential, the EPA reviewed the past 5 years of TSS effluent monitoring data collected by the facility. Between August 2011 and July 2016 TSS effluent concentrations ranged from 1060 mg/L to 1880 mg/L.

Idaho does not currently have numeric criteria for sediment (See IDAPA 58.01.02). In order to develop water quality-based effluent limits, the EPA has interpreted Idaho's narrative criteria for sediment into a numeric criteria using the receiving water targets outlined within the Lake Walcott TMDL.

The Lake Walcott TMDL Section 3.1.3.1 states the target sediment concentrations for the Snake River reach from Minidoka Dam to Milner Dam are 25 mg/L average monthly limit (AML) and 40 mg/L maximum daily limit (MDL).

The target sediment concentrations in the Lake Walcott TMDL are significantly higher than the past 5 years of effluent concentration data. A mixing zone may not be appropriate because the IDEQ has listed sediment as a pollutant of concern.

Therefore, the Total Suspended Solids (TSS) AMLs are as follows:

TSS Concentration AML = 25 mg/L

TSS Loading AML:

Design Flow × Concentration Limit × Conversion Factor = Loading Limit

2.4 mgd × 25 mg/L × 8.34 = 500 lbs/day

NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. The AWL is calculated to be 1.5 times the AML. Therefore, the AWLs for TSS are as follows:

TSS Concentration AWL = 25 mg/L × 1.5 = 37.5 mg/L

TSS Loading AWL = 500 lbs/day × 1.5 = 750 lbs/day

The calculated water quality-based effluent limits for TSS are more stringent than the calculated technology based effluent limits for TSS as shown in Table 12. The draft permit must include the more stringent limits between technology based effluent limits and water quality-based effluent limits. Therefore, the draft permit includes the water quality-based limits.

Because the water-quality based loading limits are less stringent than the previous permit's limits below flow of 0.55 mgd, an antibacksliding analysis must be performed. See Section III.J Antibacksliding, of this fact sheet for the antibacksliding analysis performed for TSS.

Table 12. Comparison between TBELs and WQBELs for TSS

		Average Monthly Limit	Average Weekly Limit
TSS TBEL	lbs/day	1264	1896
	mg/L	--	--
TSS WQBEL	lbs/day	500	750
	mg/L	25	37.5

Nitrate + Nitrite Total (as N)

The receiving water is listed as an agricultural drinking water supply. IDAPA 58.01.02.252.02 recommends using numeric criteria from The Water Quality Criteria 1972 (Blue Book) for agricultural water supplies. The Blue Book recommends Nitrate + Nitrite Total (as N) levels of less than 100 mg/L in water for agricultural purposes.

The draft permit requires the permittee to sample for Nitrate + Nitrite Total (as N) in the effluent. These data will be used to determine if the effluent discharged by the facility has the reasonable potential to cause or contribute to a water quality standards violation.

Currently, the facility does not have reasonable potential. See Appendix D for calculations on reasonable potential for Nitrate + Nitrite Total (as N).

E. coli

The previous permit contained effluent monitoring only for *E. coli* for the City of Burley Industrial WWTP and did not contain an effluent limit based on the nature of the discharge. The City of Burley Industrial WWTP receives no municipal waste.

At the point of discharge, the Snake River is protected for primary contact recreation. The recreational park Lex Kunau Park is located downstream of the outfall. The park is not officially designated as a public swimming beach by any Idaho state agency. However, the park contains a swimming dock, a lifejacket exchange stand, and public references to swimming use on its web site.

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

The Idaho water quality standards also state that a water sample that exceeds certain "single sample maximum" values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the "single sample maximum" value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.). For waters designated for primary contact recreation and are additionally specified as public swimming beaches, the "single sample maximum" value is 235 organisms per 100 ml (IDAPA 58.01.02.251.01.b.iii.).

In order to determine reasonable potential, the EPA reviewed the past 5 years of *E. coli* effluent monitoring data collected by the facility and compared this data to the water quality standard for the receiving water. This data is summarized in Table 13.

Table 13. *E. coli* Effluent Monitoring Data

***E. coli* Monitoring Period**	**Units**	**5th Percentile**	**Median**	**95th Percentile**	**Water Quality Standard[1]**
Instantaneous Maximum	#/100 mL	308	3441	24196	406 or 235
Average Monthly	#/100 mL	160	723	9201	126

1. IDAPA 58.01.02.251, *E.coli* Idaho Water Quality Standard for Primary Contact Recreation

The median and 95th percentiles of the collected *E.coli* effluent monitoring data are significantly higher than the water quality standard for *E. coli* in the receiving water; therefore, the EPA determined that there is reasonable potential for the effluent to cause or contribute to an excursion of the water quality standard for *E. coli.*

A mixing zone is not appropriate for bacteria for waters designated for contact recreation. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml.

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while

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

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

Because of the proximity of the swimming beach to the outfall, the facility is required to notify the IDEQ when a single sample maximum is greater than 235 organisms per 100 ml

The recommended limits for *E. coli* are new water quality-based effluent limit for the facility. After review of the DMR data, it is not expected that the facility will be able to meet the new limit on the effective date of the permit. A compliance schedule to allow the permittee time to meet the new *E. coli* monitoring and reporting conditions is appropriate. See Section VII.A Compliance Schedules of this Fact Sheet for a discussion on the applicability of the Compliance Schedule. See the draft Permit Section II.C Compliance Schedule and Table 5. Tasks Required Under the Schedule of Compliance for *E. coli* for a review of the permit requirements regarding this compliance schedule.

Arsenic

The Idaho state water quality standards at Idaho IDAPA 58.01.02.210 establish arsenic criteria for the protection of human health of 10 µg/L for both consumption of water and fish and water only. These criteria were approved by the EPA in 2010 (hereinafter referred to as the 2010 arsenic criteria).

On June 7, 2016, the EPA entered into a Consent Decree with Northwest Environmental Advocates (NWEA) addressing the EPA's approval of the 2010 arsenic criteria (2016 NWEA CD). The 2016 NWEA CD remands the EPA's 2010 approval of the 2010 arsenic criteria. It required the EPA to take a new action to approve or disapprove the 2010 arsenic criteria by September 15, 2016. The EPA disapproved the 2010 arsenic criteria prior to September 15, 2016.

In conjunction with the 2016 NWEA CD, the EPA also entered into a Settlement Agreement with NWEA (NWEA SA). In the NWEA SA, the EPA agreed that if the EPA disapproves the 2010 arsenic criteria, then between the date new arsenic water quality criteria are in place for CWA purposes, the EPA will use Idaho's 1994 arsenic criteria when interpreting the

narrative toxics criteria. These criteria are 6.2 µg/L to protect consumption of organisms only and 0.02 µg/L to protect consumption of water and organisms.

Because the City of Burley Industrial WWTP has detectable concentrations of arsenic, the EPA evaluated the detected concentrations of arsenic against both the 2010 arsenic criteria and the 1994 criteria for arsenic. Since the Snake River is not designated as a drinking water source, nor is it an existing use, when analyzing reasonable potential using the 1994 criteria, the EPA considers 6.2 µg/L to be protective of human health. In either case, the facility did not have reasonable potential to exceed the criteria at the current design flow.

Cadmium, Chromium, Copper, Nickel, and Zinc

In the permit renewal application submitted by the City of Burley Industrial WWTP the facility provided effluent sampling data for all required metals. Cadmium, Chromium, Copper, Nickel, and Zinc had detectable levels within the effluent, and are therefore included as Pollutants of Concern.

The Idaho water quality standards have developed criteria for metals that are protective of aquatic life. Human health criteria are discussed separately below. The criteria are numeric values that represent contaminant concentrations that are not to be exceeded in the receiving water. These criteria are applicable to the Snake River.

The draft permit requires the permittee to sample for metals in the effluent and the receiving water. These data will be used to determine if the effluent discharged by the facility has the reasonable potential to cause or contribute to a water quality standards violation. Currently, the facility does not have reasonable potential at the current design flow. See Appendix D for calculations on reasonable potential for metals. Since some metals criteria are dependent on the hardness of the receiving water, the draft permit also proposes monitoring for hardness in the receiving water.

The permit includes new effluent and surface water quality monitoring requirements to evaluate the impact of the discharge with copper criteria. IDEQ adopted new criteria effective under state law on March 28, 2018 that incorporates aquatic life criteria for copper using the biotic ligand model for copper (BLM). The BLM is a metal bioavailability model that uses receiving water body characteristics and monitoring data to develop site-specific water quality criteria. Input data for the BLM include: temperature, pH, dissolved organic carbon (DOC), major cations (Ca, Mg, Na, & K), major anions (SO4 & Cl), alkalinity, and sulfide. The new and revised water quality standard was submitted to EPA on January 8, 2019. The EPA approved the standards on May 2, 2019. The permit proposes to monitor for these data in the effluent and receiving water body to determine if the effluent discharged by the facility has the reasonable potential to cause or contribute to the new water quality standard for copper.

Human Health Criteria for Copper, Nickel, and Zinc

The Idaho state water quality standards at IDAPA 58.01.02.210 establish criteria for Copper, Nickel, and Zinc for the protection of human health for both consumption of water and fish and water only. Idaho adopted these criteria under State law on March 25, 2016 and submitted the criteria to the EPA for review and approval/disapproval under the CWA on December 13, 2016. The EPA approved these criteria on April 4, 2019.

A reasonable potential calculation shows that the City of Burley Industrial WWTP discharge will not have the reasonable potential to cause or contribute to a violation of the water quality criteria at the design flow. Therefore, the draft permit does not include a water quality-based effluent limit for Copper, Nickel, and Zinc. See Appendix D for calculations on reasonable potential for metals.

Phenol, Methyl Bromide, and Bis (2-ethylhexl) phthalate

In the permit renewal application submitted by the City of Burley Industrial WWTP the facility provided effluent sampling data for all toxics. Phenol, Methyl Bromide, and Bis (2-ethylhexl) phthalate had detectable levels within the effluent, and are therefore included as Pollutants of Concern.

The Idaho state water quality standards at IDAPA 58.01.02.210 establish criteria for Phenol, Methyl Bromide, and Bis (2-ethylhexl) phthalate for the protection of human health for both consumption of water and fish and water only. Idaho adopted these criteria under State law on March 25, 2016 and submitted the criteria to the EPA for review and approval/disapproval under the CWA on December 13, 2016. The EPA approved the criteria on April 4, 2019.

A reasonable potential calculation shows that the City of Burley Industrial WWTP discharge will not have the reasonable potential to cause or contribute to a violation of the water quality criteria at the design flow. Therefore, the draft permit does not include water quality-based effluent limits for Phenol, Methyl Bromide and Bis (2-ethylhexl) phthalate.

The draft permit requires the permittee to sample for these toxic compounds in the effluent and the receiving water. These data will be used to determine if the effluent discharged by the facility has the reasonable potential to cause or contribute to a water quality standards violation. See Appendix D for calculations on reasonable potential for these toxic compounds.

Oil and Grease

The 2000 Lake Walcott TMDL listed oil and grease as a pollutant of concern. Federal regulations state that NPDES permits must include effluent limits consistent with the assumptions and requirements of any available WLA in a TMDL for the discharge prepared by the State and approved by the EPA. (See 40 CFR 130.7 (40 CFR 122.44(d)(1)(vii)(A)). In the EPA's letter dated July 3, 2000, the EPA only approved the 2000 Lake Walcott TMDL for total phosphorus. Since the Snake River is not impaired for sediment or oil and grease at the time, the EPA did not approve this portion of the TMDL.

Idaho does not currently have numeric criteria for oil and grease (See IDAPA 58.01.02). In addition, the Snake River is currently not impaired for oil and grease. Therefore, the draft permit removes effluent monitoring for oil and grease.

It should be noted, however, that the draft permit contains the narrative requirement to visually check for "floating, submerged, or suspended matter" consistent with Idaho state water quality standards which require surface waters of the state to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions that may impair designated beneficial use.

Temperature

The Idaho water quality standards require ambient water temperatures of 33°C with maximum daily average temperature of 29°C for warm waters (See IDAPA 58.01.02.250). Currently, this segment of the Snake River is meeting the standard.

No reasonable potential was found to exceed the criteria for temperature at the current design flow (See Appendix D). The draft permit includes continuous effluent temperature monitoring to provide data to re-evaluate reasonable potential for the next permit term.

Industrial wastewater influents have a greater possibility for thermal variation than a typical municipal POTW influent. In addition, the facility retains the capability to accept new industrial influents and/or receive influents with different characteristics than it is currently receiving. Therefore, because the POTW treats primarily industrial waste, the draft permit retains the previous Maximum Daily Limit of 32°C for temperature.

Residues

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

Whole Effluent Toxicity (WET)

The EPA evaluated chronic WET tests performed by the facility annually from 2010 – 2017. The WET test performed in October 2014, submitted on the April 2015 DMR, had a result of 321 TU_c for *ceriodaphnia dubia* reproduction. This result was greater than the permit trigger of 24.2 TU_c. A subsequent WET test conducted in early November 2014, also exceeded the trigger, with a reported TU_c of 36.43 for *ceriodaphnia dubia* reproduction. All other tests were below the trigger value for all endpoints.

The EPA found the October 2014 WET result of 321 TUc to be anomalous after examining the laboratory report, due to the following:

- The dose response curve for *ceriodaphnia dubia* reproduction was interrupted. Typically, toxicity increases as the effluent percentage increases and the dilution water decreases. The EPA found this was not the case for this result, with instances of higher concentrations of effluent resulting in less toxicity than lower concentrations of effluent.
- The control replicates did not yield a consistent reproduction rate, with inter-replicate reproduction rates being highly variable.
- The test data for *ceriodaphnia* reproduction exhibited a non-normal distribution and unequal variances.

Therefore, the EPA did not use the October 2014 test result in determining reasonable potential. Reasonable potential calculations for WET can be found in Appendix D. Based on the data analyzed, the effluent does not demonstrate a reasonable potential to violate Idaho's narrative water quality standard for toxicity.

An increase from annual WET testing to 4x/Oct-May has been included in the draft permit. The EPA internal WET guidance for monitoring recommends monthly WET testing monitoring for facilities with a design flow of >1 mgd, but also recommends taking into

account other factors in determining monitoring frequency, such as effluent characteristics and compliance. The EPA considered the full WET history of the facility's discharge, including the anomalous tests and passed tests, in determining an appropriate WET testing frequency, as well as the addition of a new major wastewater contributor to the facility (Gem State Processing).

All WET tests must be performed between October 1st and May 31st, during the seasonal low flows of the receiving water. If the first 8 WET tests are below the trigger of 23.8 TUc a reduction in WET testing to 2x/year may be requested by the permittee. See Permit Section I.D.

The previous permit's trigger of 24.2 TUc is the Dilution Factor based on the November – April 7Q10 with a 25% Mixing Zone. The draft permit proposes a trigger of 23.8 TUc at a design flow of 2.4 mgd based on the October - May 7Q10 with a 25% Mixing Zone.

J. 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*.

The draft permit includes less stringent limits for ammonia, BOD_5, and TSS. An anti-backsliding analysis was prepared for ammonia, BOD_5, and TSS.

Ammonia

A WQBEL for ammonia was calculated based on existing data and was calculated to be less stringent than the current existing limits for ammonia, with the exception of the mass based average monthly limit (AML) for low flow months, which was more stringent. An anti-backsliding analysis was done for ammonia.

The facility has consistently met its ammonia limits year-round, with the exception of a single violation which occurred in July 2013. The facility stated that this result was not indicative of the treatment capabilities of the wastewater treatment plant, and that the facility was undergoing upgrades and optimizations at this time. Ammonia data after July 2013 support this claim, with daily maximum loads ranging from a minimum of 0.1 lbs/day to a maximum 581 lbs/day, well below the existing permit limits.

The justification for the ammonia mixing zone is to minimize the mixing zone requested for no reasonable potential. There is no RP for the months of June 1- September 30 which is the high flow season. The minimum mixing zone requested of IDEQ is 15 percent based on the spreadsheet on page 64 and on page 29. However, the existing limits which are mass only, are retained because of the anti-backsliding rule.

For the low flow season of October 1 through May 30 the maximum allowable mixing zone of 25 percent is used and requested from IDEQ for reasonable potential analysis and the effluent limitation. At the design flow of 2.4 mgd the mass loading limit is 834 lbs/day.

2.4 x 41.7 x 8.34 = 834 lbs/day

However, the antibacksliding rule prohibits the increase in mass loading limits over the existing mass limits of 658 lbs/day as shown in Table 14 below. Therefore, the loading limit during the low flow period of October 1 through May 30 is 658 lbs/day.

In summary, the EPA has retained the mass-based limits (in lbs/day) for ammonia from the existing permit for the MDL for the low flow season (October through May) and the AML and MDL for the high flow season (June through September). See Table 14 for a summary of the ammonia limits included in the draft permit.

Table 14. Comparison of Ammonia Limits

	Existing Permit Ammonia Limits				**Draft Permit Ammonia Limits**			
	Average Monthly		Maximum Daily		Average Monthly		Maximum Daily	
	mg/L	lb/day	mg/L	lb/day	mg/L	lb/day	mg/L	lb/day
Low Flow Months[1]	--	292	--	658	13	260	41.7	658
High Flow Months[2]	--	1759	--	3966	--	1759	--	3966

Notes:

1. Low Flow Months defined as October 1 – April 30 in previous permit and defined as October 1 – May 31 in Draft Permit

2. High Flow Months defined as May 1 – September 30 in previous permit and defined as June 1 – September 30 in Draft Permit

BOD_5 and TSS

The draft permit includes less stringent BOD_5 and TSS limits than those in the previous permit. Section 402(o)(2) of the CWA provides allowances for relaxed limitations for TBELs when "there have been material and substantial alterations or additions to the permitted facility that justify the relaxation."

The industrial discharges discharging effluent to the City of Burley Industrial WWTP have changed substantially in the type and amount of materials processed, allowing for a relaxation of TBELs under the exception for substantial additions to the permitted facility. Most significantly, a new industrial plant, Gem State Processing, began discharging effluent to the City of Burley Industrial WWTP. The newly calculated ELGs (See Section IV.H for calculations) include the new effluent discharges from Gem State Processing.

Table 15. Comparison of BOD_5 Limits

			< 0.44 mgd	**0.44 mgd – 1.67 mgd**	**≥1.67 mgd**
Existing Permit Limits	**Average Monthly Limit**	lbs/day	110 lbs/day	600 lbs/day	600 lbs/day
		mg/L	--	30 mg/L	30 mg/L
		lbs/day	165 lbs/day	901 lbs/day	901 lbs/day

	Average Weekly Limit	mg/L	--	45 mg/L	45 mg/L
Newly Calculated Limits	**Average Monthly Limit**	lbs/day	419 lbs/day	419 lbs/day	600 lbs/day
		mg/L	--	--	30 mg/L
	Average Weekly Limit	lbs/day	628.5 lbs/day	628.5 lbs/day	901 lbs/day
		mg/L	--	--	45 mg/L
1. Newly calculated limits less stringent than existing permit limits are highlighted.					

Table 16. Comparison of TSS Limits

			< 0.55 mgd	**≥0.55 mgd**
Existing Permit Limits	**Average Monthly Limit**	lbs/day	138 lbs/day	600 lbs/day
		mg/L	--	30 mg/L
	Average Weekly Limit	lbs/day	207 lbs/day	901 lbs/day
		mg/L	--	45 mg/L
Newly Calculated Limits	**Average Monthly Limit**	lbs/day	500 lbs/day	500 lbs/day
		mg/L	25 mg/L	25 mg/L
	Average Weekly Limit	lbs/day	750 lbs/day	750 lbs/day
		mg/L	37.5 mg/L	37.5 mg/L
1. Newly calculated limits less stringent than existing permit limits are highlighted.				

Current Facility Loading for BOD_5 and TSS

In order to evaluate the need for relaxation of loading limits for BOD_5 and TSS, the EPA evaluated DMR data from the City of Burley Industrial WWTP from August 2011 through July 2017. Exceedances from this data were summarized in Table 3. Below is a copy of the relevant exceedances for BOD_5 and TSS loading:

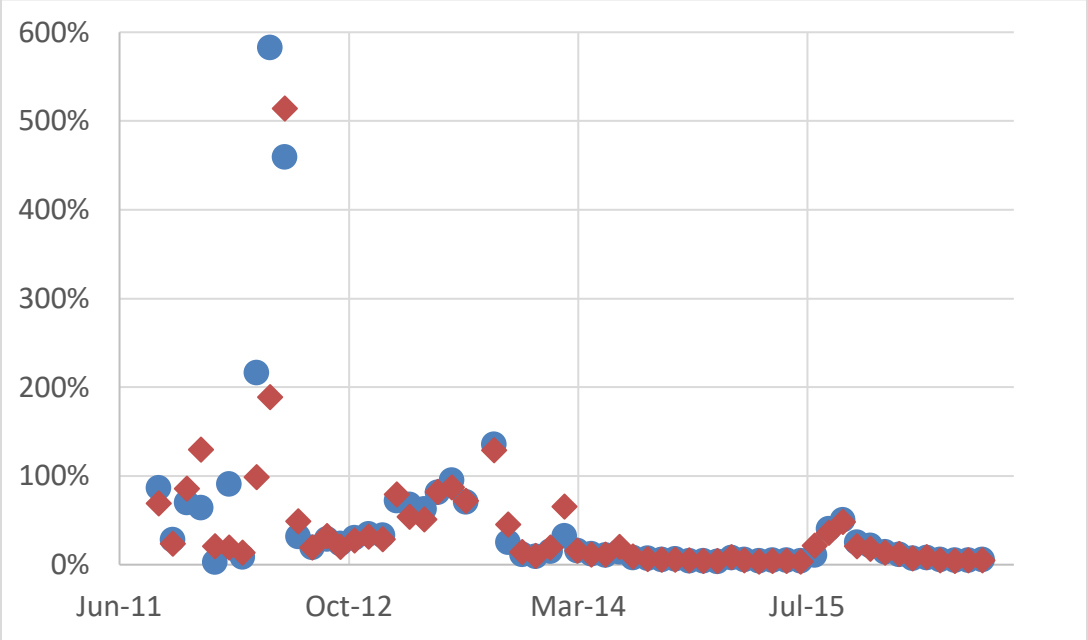
Table 17. BOD_5 and TSS exceedances

Parameter	Limit	Units	Number of Instances	Violation Code
BOD_5	Weekly Average	lbs/day	10	E90
BOD_5	Monthly Average	lbs/day	5	E90
Total Suspended Solids	Weekly Average	lbs/day	9	E90
Total Suspended Solids	Monthly Average	lbs/day	9	E90

The facility has a history of exceedances for BOD_5 and TSS. The last BOD_5 exceedence was reported in January 2014, and the last TSS exceedence was reported in May 2014.

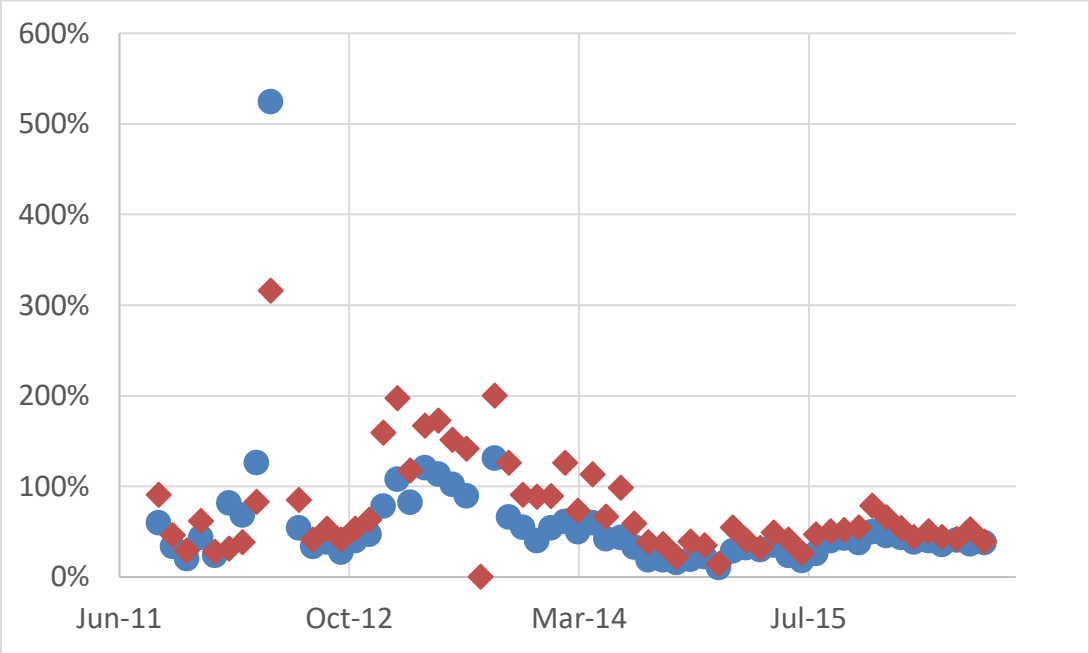
The EPA also evaluated the need for a relaxation of loading limits by graphing historical pollutant loading as a function of the loading limit as shown in Figure 1, where 100% is equal to all allowable pollutant loading being used for that month (e.g., discharging 900 lbs/day when 900 lbs/day is the permit limit) and 0% is equal to no pollutant discharged. Any value over 100% would constitute an exceedence of the loading limit.

Figure 1. Percent of BOD_5 Loading Limit Discharged



Circles represent % AML discharged and diamonds represent % AWL discharged. Since January 2014, the facility has consistently met permit limits for BOD_5 loading, and has discharged no more than 50% of the permit loading limit for BOD_5.

Figure 2. Percent of TSS Loading Limit Discharged



Circles represent % of the AML discharged and diamonds represent % AWL discharged. Since May 2014, the facility has consistently met permit limits for TSS loading, but is regularly at or above 50% of the permit loading limit for TSS.

Conclusion

The EPA has found the facility to be capable of consistently meeting its BOD_5 loading limits.

The existing permit's BOD_5 loading limits have been carried forward and included in the draft permit when the newly calculated limits were less stringent than the previous permit's limits. This applies to the existing limits for BOD_5 when flows are less than 0.44 mgd (see Table 15 second row fourth column). Therefore, backsliding is not required and the limits for flows less than 0.44 lbs/day are retained i.e. carried forward from the existing permit.

The EPA has found the facility has shown a demonstrable need for the newly calculated TSS loading limits. Because the facility meets the exception against antibacksliding due to a substantial addition to the facility and because IDEQ found the draft permit conditions met the state of Idaho's antidegradation policy (See Appendix E), the EPA has included the less stringent TSS TBELs in the draft permit.

A summary of the final BOD_5 and TSS limits included in the draft permit is shown in Table 18.

Table 18. BOD_5 and TSS Draft Permit Limits

Parameter	Units	Effluent Limitations	
		Average Monthly	Average Weekly
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow <0.44)	mg/L	Report	Report
	lbs/day	110	165
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow 0.44 – 1.67)	mg/L	30	45
	lbs/day	419	628.5
Biochemical Oxygen Demand (BOD_5) (Monthly Average Effluent Flow >1.67)	mg/L	30	45
	lbs/day	600	901
Total Suspended Solids (TSS)	mg/L	25	37.5
	lbs/day	500	750

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

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

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to the EPA.

B. Effluent Monitoring

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

Effluent Monitoring Changes from the Previous Permit

Effluent monitoring for total nitrate as N, total kjeldahl nitrogen, total dissolved solids (TDS), and dissolved oxygen (DO) have been removed. Nitrate + nitrite as N monitoring remains as nitrate is a pollutant of concern due to the receiving water's status as an agricultural water supply. Nitrogen is no longer a pollutant of concern for the nutrient impairment due to the TMDL identifying phosphorus as the limiting nutrient in the receiving water. TDS is not a pollutant of concern. The permit includes monitoring requirements and limits for BOD_5, which is protective of DO in the receiving water.

Effluent monitoring for dissolved organic carbon (DOC), arsenic, cadmium, chromium VI, copper, nickel, zinc, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate were added. Alkalinity, calcium, magnesium, conductivity, chloride, potassium, sodium, sulfate and total hardness are required in order to evaluate copper using the copper Biotic Ligand Model. Arsenic, cadmium, chromium VI, copper, nickel, zinc, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate are required to gather additional information for the next permit term. These pollutants were found in detectable quantities in the permit application. Additional monitoring will assist in determining reasonable potential for the next permit.

Conditional effluent monitoring requirements for chloroform, chromium III, cyanide, lead, selenium, and silver have been removed. These requirements were specifically for the anticipation of an ethanol plant discharging to the facility. There are currently no plans for an ethanol plant to discharge to the facility.

The facility previously discharged to the receiving water through a series of polishing ponds. The polishing ponds have been decommissioned and the facility now discharges directly to the receiving water. Therefore, effluent monitoring locations and requirements associated with the polishing ponds have been removed from the draft permit.

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 19 presents the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR and as an annual report.

Table 19. Surface Water Monitoring in Draft Permit

Parameter	Units	Frequency	Sample Type	Monitoring Location
Total Ammonia as N	mg/L	Monthly	Grab	Upstream
Temperature[2]	ºC	Monthly	Grab	Upstream and Downstream
pH[2]	SU	Monthly	Grab	Upstream and Downstream
Alkalinity[2]	mg/L as $CaCO_3$	1/month	Grab	Upstream and Downstream
Conductivity[2]	umhos/cm	1/month	Grab	Upstream and Downstream
Dissolved Organic Carbon[2]	mg/L	1/month	Grab	Upstream and Downstream

Parameter	Units	Frequency	Sample Type	Monitoring Location
Total Hardness[2]	mg/L as $CaCO_3$	1/month	Grab	Upstream and Downstream
Chloride[2]	mg/L	1/month	Grab	Upstream and Downstream
Potassium[2]	mg/L	1/month	Grab	Upstream and Downstream
Sodium[2]	mg/L	1/month	Grab	Upstream and Downstream
Sulfate[2]	mg/L	1/month	Grab	Upstream and Downstream
Calcium[2]	mg/L	1/month	Grab	Upstream and Downstream
Magnesium[2]	mg/L	1/month	Grab	Upstream and Downstream
Copper, Total Recoverable[2]	µg/L	1/month	Grab	Upstream and Downstream
Oil & Grease	mg/L	Quarterly	Grab	Upstream
Arsenic (Total Recoverable)	µg/L	Quarterly	Grab	Upstream
Cadmium, Dissolved[2]	µg/L	Quarterly	Grab	Upstream
Chromium VI, Dissolved[2]	µg/L	Quarterly	Grab	Upstream
Nickel[2]	µg/L	Quarterly	Grab	Upstream
Zinc[2]	µg/L	Quarterly	Grab	Upstream
Receiving Water Depth	m	2x/year[3]	Measure	Outfall 003
Receiving Water Width	m	2x/year[3]	Measure	Outfall 003

Notes:

1. For quarterly monitoring frequency, quarters are defined as: January 1 to Mach 31; April 1 to June 30; July 1 to September 30; and, October 1 to December 31.
2. Samples for temperature, pH, dissolved organic carbon, alkalinity, conductivity, dissolved organic carbon, total hardness, chloride, potassium, sodium, sulfate, cadmium, chromium VI, nickel, zinc, calcum, magnesium and copper must be collected on the same day from the effluent and from the receiving water in accordance with Table 1 and Table 3 of this permit.
3. Measurements must be taken during the following time periods: once during the high flow months between June 1 – September 30, and once during the low flow months between October 1 – May 31.

Receiving Water Monitoring Changes from the Previous Permit

Downstream receiving water monitoring for total ammonia as N has been removed. The polishing ponds have been decommissioned, eliminating the need for downstream monitoring due to seepage from the polishing ponds.

Downstream receiving water monitoring for alkalinity, conductivity, dissolved organic carbon (DOC), total hardness, chloride, potassium, sodium, calcium, magnesium and sulfate has been added. These parameters are required in order to evaluate copper in the receiving water, including copper criteria under the biotic ligand model.

Upstream receiving water monitoring for DOC, conductivity, chloride, potassium, sodium, sulfate, oil & grease, total hardness as $CaCO_3$, arsenic, cadmium, chromium VI, copper,

nickel, and zinc has been added. DOC, chloride, potassium, sodium, sulfate, calcium magnesium and conductivity are parameters required in order to evaluate copper in the receiving water, including copper criteria under the biotic ligand model. Oil and grease are pollutants of concern based on the TMDL. Total hardness as $CaCO_3$ is required in order to evaluate assimilative capacity of metals. Arsenic, cadmium, chromium VI, copper, nickel, and zinc are pollutants of concern based on detectable levels in the effluent. Monitoring for metals in the receiving water will allow the EPA to establish assimilative capacity in the receiving water.

Measuring receiving water depth and width at Outfall 003 are required in order to run the CORMIX model. CORMIX will model the facility's mixing zones to ensure there are no overlapping mixing zones between the City of Burley Industrial WWTP and the City of Burley WWTP outfalls.

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.

VI. Sludge (Biosolids) Requirements

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

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

VII. Other Permit Conditions

A. Compliance Schedules

Compliance schedules are authorized by federal NPDES regulations at 40 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 appropriate for *E. coli* because the City of Burley Industrial WWTP cannot immediately comply with the new effluent on the effective date of the permit. Refer to Section 9.1.3 Compliance Schedules in the Permit Writers Manual.

The draft permit proposes a Compliance Schedule length of 2 years to achieve compliance with the final effluent limit. An annual report is due after 1 year from the effective date of the permit. It is expected that the facility design flow upgrade will coincide with any necessary upgrades to achieve compliance with the *E. coli* effluent limit. Because the facility does not possess the capability to treat *E. coli* and because of the short compliance schedule no interim limit has been included in the permit.

Refer to Section III.C. of the draft Permit and Table 5 of the draft Permit for information and requirements regarding the *E. coli* compliance schedule.

B. Quality Assurance Plan

The City of Burley Industrial WWTP 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 permit requires the City of Burley Industrial WWTP 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. Pretreatment

The facility operates under an EPA approved POTW pretreatment program per 40 CFR 403.8. The facility must implement its pretreatment program in accordance with its approved pretreatment program submission entitled *Industrial Waste Pretreatment Program, City of Burley, Idaho* (August 30, 1984).

The Burley IWTP and the collection system associated with it is a publicly owned treatment works (POTW) as defined by 40 CFR 403.3(o). Because the POTW treatment plant is treating exclusively industrial waste, the pretreatment requirements of 40 CFR 403 apply to this facility. Indirect dischargers to the treatment plant must comply with the applicable requirements of 40 CFR 403, any categorical pretreatment standards promulgated by EPA, and any additional or more stringent requirements imposed by the City of Burley as part of its approved pretreatment program or sewer use ordinance (e.g. local limits).

Major dischargers to the facility include Gem State Processing, a potato dehydration facility; High Desert Milk, Inc., a milk processing facility producing powder and milk products; and Gossner Foods, a cheese plant. Dischargers from these three facilities make up 100% of the facility's effluent.

The draft permit includes requirements to continue implementation of the approved pretreatment program. It continues the pretreatment sampling requirements from the previous permit. The draft permit also requires the permittee to conduct a local limits evaluation to demonstrate whether local limits are necessary (40 CFR 403.8(f)(4)). The facility is required to submit the completed study to the EPA. The Annual Pretreatment Report, pursuant to 40 CFR 403.12(i) is due by March 1st of each year. The report is required to describe the facility pretreatment program's activities over the previous calendar year.

F. Environmental Justice

As part of the permit development process, the EPA Region 10 conducted a screening analysis to determine whether this permit action could affect overburdened communities. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. The EPA used a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the Census block group level. This tool is used to identify permits for which enhanced outreach may be warranted.

The City of Burley Industrial WWTP is located within or near a Census block group that is potentially overburdened because of major direct discharges to water (99th percentile), Rick Management Plan (RMP) facilities (89th percentile), and lead paint indicator (82nd percentile). In order to ensure that individuals near the facility are able to participate meaningfully in the permit process, the EPA is conducting the following enhanced outreach activities: in addition to the standard newspaper public notice and public notice posting on the EPA web site, the EPA will provide a copy at the Burley City library.

Regardless of whether the City of Burley Industrial WWTP is located near a potentially overburdened community, the EPA 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#p-104). 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.

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*,

G. 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.

VIII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. The endangered species that may be located within the vicinity of the discharge include the Snake River Physa. The EPA has determined that issuance of this permit will have no effect on the Snake River Physa.

According to the *Biological Assessment for Bureau of Reclamation Operations and Maintenance in the Snake River Basin above Brownlee Reservoir on Snake River Physa Snail, April 2015* (hereafter referred to as the Reclamation BA), the portion of the Snake River between I-84 Bridge and Milner Dam is unsuitable habitat for the Snake River Physa (See Reclamation BA pg 5). This stretch of the Snake River includes the City of Burley Industrial WWTP's outfall.

The study *Taxonomic identity of the endangered Snake River physa, Physa natricina (Pulmonata: Physidae) combining traditional and molecular techniques, Gates et. al 2012* (hereafter referred to as Gates et. al 2012) found zero sightings of the Snake River Physa between the I-84 bridge and Milner Dam, reaffirming the Reclamation BA's findings.

This assessment concurs with the previous permit ESA evaluation for the City of Burley Industrial Wastewater Treatment Plant NPDES Permit #ID0000663. The fact sheet for the previous permit, written in 2006, found the discharge would have no effect on the Snake River Physa.

Therefore, the EPA has determined that the Snake River Physa is not located near City of Burley Industrial WWTP's outfall location and therefore this permit will have no effect on the Snake River Physa. This is supported due to lack of suitable habitat and zero sightings (between I-84 bridge and Milner Dam) in recent surveys for the Snake River Physa.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH).

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

The EPA has determined that issuance of this permit will have no effect on any EFH species in the vicinity of the discharge. The EPA has provided NOAA Fisheries with copies of the draft permit and fact sheet during the public notice period. Any comments received from NOAA Fisheries regarding EFH will be considered prior to reissuance of this permit.

C. State Certification

Section 401 of the CWA requires the EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation. A copy of the draft 401 certification is provided in Appendix E.

D. Antidegradation

The IDEQ has completed an antidegradation review which is included in the draft 401 certification for this permit (See 0). The EPA has reviewed this antidegradation analysis and

finds that it is consistent with the State's water quality standards and the State's antidegradation implementation procedures. Comments on the 401 certification including the antidegradation review can be submitted to the IDEQ as set forth above (See State Certification on Page 1 of this Fact Sheet).

E. Permit Expiration

The permit will expire five years from the effective date.

IX. References

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

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

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

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

Gates et al. 2012. *Taxonomic identity of the endangered Snake River physa, Physa natricina (Pulmonta: Physidae) combining traditional and molecular techniques.* Conservation Genetics 14:159-169, December 2012.

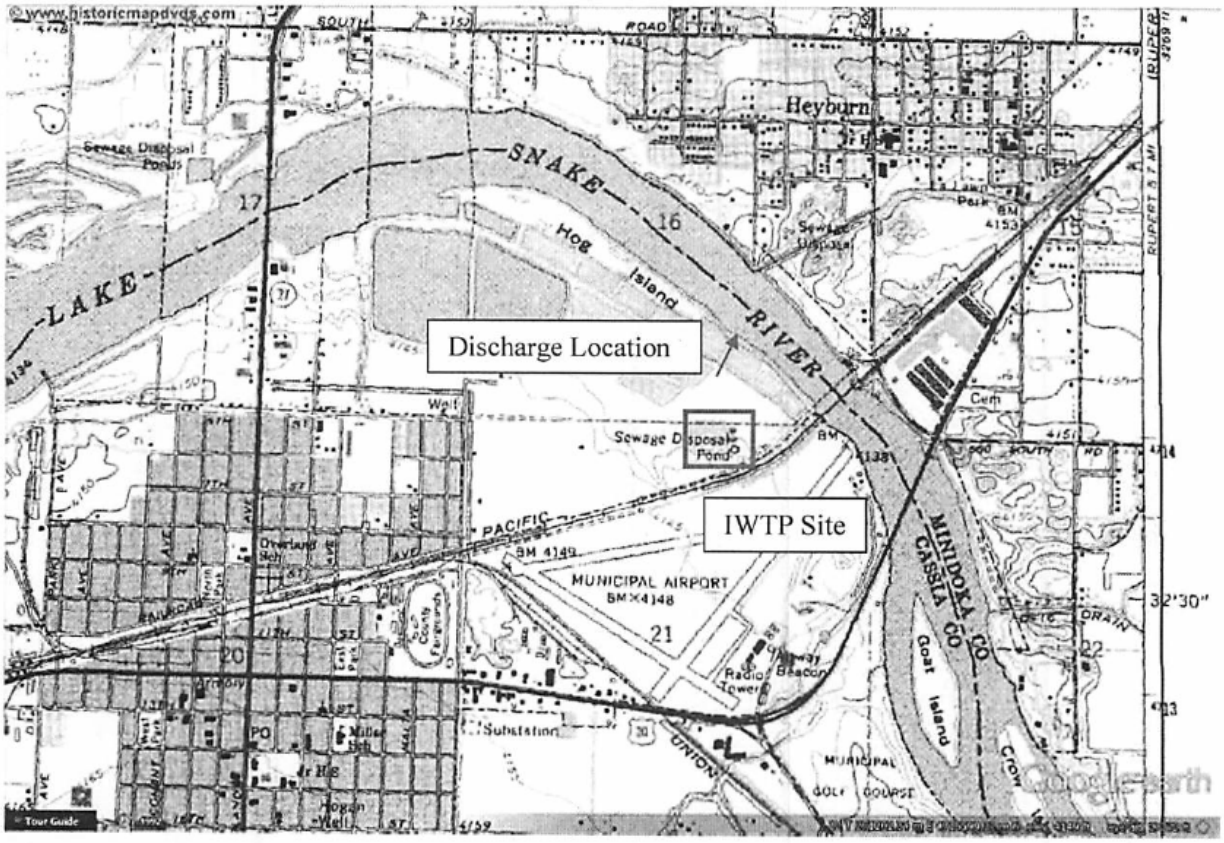
IDEQ, 2000. *The Lake Walcott Subbasin Assessment, Total Maximum Daily Load, and Implementation Plan*. Idaho Department of Environmental Quality, 2000.

IDEQ, 2014. *Idaho's 2014 Integrated Report. Idaho Department of Environmental Quality,* February 2017.

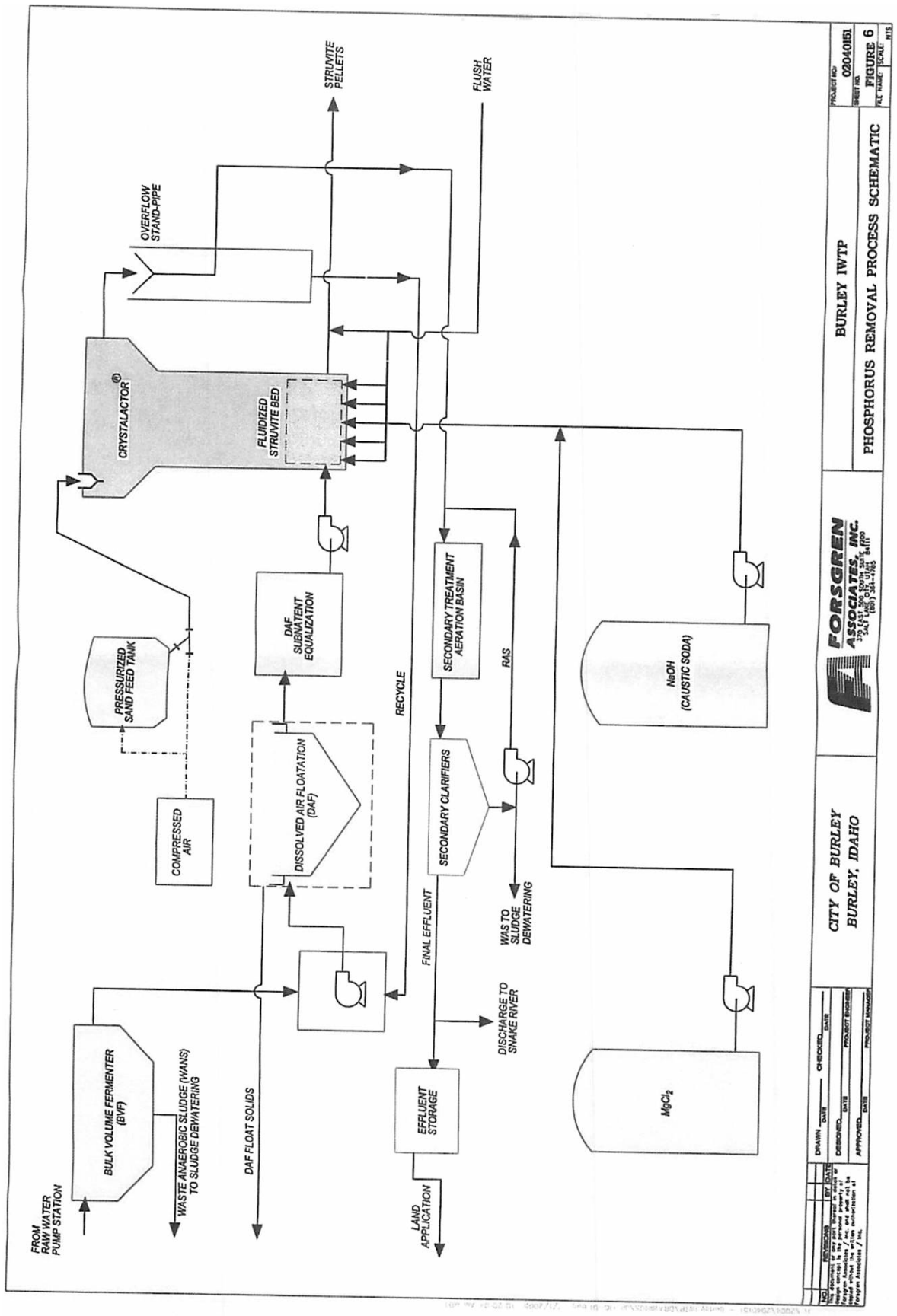
Reclamation, 2015. *Biological Assessment for Bureau of Reclamation Operations and Maintenance in the Snake River Basin above Brownlee Reservoir on Snake River Physa Snail (Haitia [Physa] natricina).* Bureau of Reclamation, April 2015.

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

Appendix A. Facility Information



City of Burley Industrial Wastewater Treatment Plant
NPDES Discharge Permit Renewal
November 2013
Site Map for Form 1


STRUVITE PELLETS
FLUSH WATER
OVERFLOW STAND-PIPE
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DAF SUBNATENT EQUALIZATION
SECONDARY TREATMENT AERATION BASIN
RECYCLE
RAS
NaOH (CAUSTIC SODA)
COMPRESSED AIR
DISSOLVED AIR FLOATATION (DAF)
SECONDARY CLARIFIERS
FINAL EFFLUENT
WAS TO SLUDGE DEWATERING
DISCHARGE TO SNAKE RIVER
FROM RAW WATER PUMP STATION
BULK VOLUME FERMENTER (BVF)
WASTE ANAEROBIC SLUDGE (WANS) TO SLUDGE DEWATERING
DAF FLOAT SOLIDS
EFFLUENT STORAGE
LAND APPLICATION
$MgCl_2$
CITY OF BURLEY
BURLEY, IDAHO
FORSGREN ASSOCIATES, INC.
BURLEY IWTP
PHOSPHORUS REMOVAL PROCESS SCHEMATIC
FIGURE 6

Appendix B. Water Quality Data

A. Treatment Plant Effluent Data

Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Percent Removal	Percent Removal	See Comments	See Comments	See Comments	See Comments	See Comments	See Comments	See Comments	See Comments
Oxygen, dissolved [DO]	Oxygen, dissolved [DO]	pH	pH	Phosphorus, total [as P]	Phosphorus, total [as P]	Phosphorus, total [as P]	Phosphorus, total [as P]	Solids, total dissolved	Solids, total dissolved	Temperature, water deg. centigrade	Temperature, water deg. centigrade	Toxicity, Chronic	BOD, 5-day, percent removal	Solids, suspended percent removal	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	Solids, total suspended	Solids, total suspended	Solids, total suspended	Solids, total suspended
DAILY MX	MO AVG	INST MAX	INST MIN	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MINIMUM	MINIMUM	MO AVG	MO AVG	WKLY AVG	WKLY AVG	MO AVG	MO AVG	WKLY AVG	WKLY AVG
mg/L	mg/L	SU	SU	lb/d	mg/L	lb/d	mg/L	mg/L	mg/L	deg C	deg C	toxic	%	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
2.88	2.88	8.27	7.4	246	37	483	62			24.8	23.3		96	94	519	79	624	106	357	60.6	543	77
3.5	3.5	8	7.4	16	27	17	28			23.2	20.7		95	95	31	94	39	121	46	77	64	113
1.16	1.16	8.32	7.8	18	26	28	34			19.8	14.6		91	93	77	162.8	142	146	28	59.6	40	59
2.1	2.1	8.3	7.52	8	13	11	16			13	11.4		95	98	71	123	214	325	60	103	85	188
1.96	1.96	7.77	7.41	10	15	14	19	1060	1060	12.1	10.78		97	94	16	45	35	90	32	47	38	60
5.42	5.42	7.91	7.73	16	7	32	11			12.9	10.7		98	97	100	31	173	52	112	37	188	56
4.28	4.28	8.02	7.54	65	14.4	153	36			15.3	12.39		99	99	50	10.3	126	19	94	19.7	228	32.5
5.01	5.01	8.01	7.44	78	15	171	31			16.1	13.4		97	95	238	51.9	888	182	174	42.6	498	103
0.72	0.72	7.98	6.19	53	23	156	29			25.8	16.9	1.42	87	70	641	253	1702	497	723	314	1897	726
0.25	0.25	7.81	6.95	202	36.6	266	46			22.7	18.9		74	17	2757	540.1	4635	1002	5457	1068	10960	2340
4.21	4.21	7.91	7.24	299	35.8	351	38	1570	1570	24.8	21.4		99	96	192	22	441	45	322	39	509	52
1.03	1.03	7.84	7.15	162	29	204	32			25.6	23.8		99	95	119	23	177	45	199	35.5	246	47
3.29	3.29	7.82	7.05	209	34.2	256	47			25.3	23.3		99	95	171	27.4	293	45	231	39	319	60
2.18	2.18	7.54	7.17	126	34.3	169	45			22.7	19.7		98	91	142	29	179	36	164	35	247	50
2.31	2.31	7.66	6.9	243	30.2	282	32			19.9	16.5		99	95	183	23	247	37	239	29.5	317	37
4.77	4.77	7.61	6.69	266	28	329	32			18.9	15.4		99	94	208	24	286	34	282	32	378	39
4.51	4.51	7.79	6.71	183	25	299	32	1340	1340	15.9	12.8		99	97	201	28	259	33	467	62	956	114
3.91	3.91	7.91	7.42	238	36.4	379	55			14.6	10.8		97	93	433	71	715	93	646	103	1183	151
5.48	5.48	7.92	7.38	188	30.8	226	36			14.2	12.2		98	96	406	72	487	84	494	90	703	125
4.97	4.97	7.9	7.4	222	35.8	235	41			15.4	13.5		98	92	375	62	460	76	721	118	1000	166
3.86	3.86	8.3	7.4	245	39	281	43			17.7	15.1	1.92	97	98	490	85	741	123	679	118	1034	172
7.48	7.48	8	7.1	267	39	307	41			22.3	18.1		97	95	570	88	786	115	612	98	907	169
3	3	7.6	7	303	49	342	61			23	21		97	98	423	78	647	152	533	97	848	199
		8.1	7.9	270	26					23.7	23.4		91	96	1382	133			1351	130		
3.21	3.21	8.5	7.7	361	42	460	50			24.7	23.6		97	95	815	94	1166	123	786	95	1201	154
5.8	4.5	8.5	7.3	331	41	410	48			26.1	20.4		95	96	150	19	409	40	394	45	757	65
7.1	7.1	8.2	7.8	318	42	416	47			22.8	17.2		99	93	71	8	132	16	328	41	545	79
5.4	5.4	8.2	7.9	431	48.3	887	57			16.8	13.1		99	94	58	7	92	13	239	29	529	55
7	7	7.8	7.3	380	41	531	49	1720	1660	16.4	8.9		98	86	93	10	175	17	324	35	534	48
8.4	8.4	8	7	266	30	359	40			8.4	8.4		97	91	195	22	590	61	364	41	754	78
10	10	7.9	7.1	324	34	452	42			19	11		99	96	95	10	142	14	297	31	438	43
9	9	7.7	6.7	31	32	35	34			22	14		95	92	73	9	102	11	358	44	680	75
9	9	8.6	6.9	346	41	548	52			23	13	3	97	94	67	8	101	10	253	30	401	38
6	6	8	7.6	339	35	481	41			24	18		99	95	87	9	181	16	261	27	589	52
8.2	8.2	7.9	7	410	41	588	54	1670	1670	22	21		99	96	49	5	83	7	195	20	352	33
5	5	8.4	6.7	267	31	389	34			27	23		99.7	92	43	5	58	6	112	13	229	20
0	5.7	8.8	6.3	261	30	333	33			26	22		99	89	35	4	51	5	113	13	216	22
7.4	7.4	8.4	6.9	272	29	360	30			24	19		99.8	98.7	38	4	54	4	94	10	132	11
7.6	7.6	8.3	6.9	233	26	291	28			18	16		99.7	97.7	27	3	44	4	116	13	234	16
4	4	8.8	6.2	188	23	238	26			18	12		99	94	24	3	38	4	131	16	207	25
4	4	8.1	6.2	172	23	307	34	1670	1640	17	11		99	98	23	3	36	4	60	8	86	10
9.3	9.3	8.3	6.6	234	21	299	27			17	13		99.7	97.7	47	5	81	9	169	19	328	35
9.4	9.4	8.1	7.2	236	25	269	29			22	16		99.8	97.6	36	4	46	5	192	21	241	27
10.6	10.6	8	7.2	231	26	248	28			20	17		99.9	97.6	25	3	30	3	180	21	193	30
7.9	7.9	8	6.2	188	25	243	27			21	16	321	100	98	30	3	38	4	207	23	292	34
7.4	7.4	8.2	7.8	183	21	231	26			21	18		99.7	96	29	3	37	4	142	16	246	26
8.8	8.8	7.8	7.1	245	27	269	30	1880	1880	24	22		99.9	97	24	3	35	4	109	12	158	16
9.5	9.5	7.7	6.9	334	33	464	39			24	22		99	95	65	7	194	19	154	16	279	31
6.5	6.5	7.5	6.2	485	37	588	43			24	22		99	97	241	18	327	24	237	18	300	22
7.3	7.3	7.6	6.4	420	27	493	29			22	20		99	97	302	20	433	28	256	18	309	25
6.1	6.1	7.6	6.8	323	23	379	26			21	19		99	97	150	11	190	13	226	16	326	22
0	8.97	7.7	6.4	385	27	406	29			19	16		99	96	132	10	162	11	298	21	470	29
8.3	8.3	7.9	6.8	266	19	301	25	1880	1740	23	14		98	96	86	6	121	8	272	20	396	25
7.2	7.2	8.8	7.4	193	14	241	16			18	14		99	96	70	5	109	8	260	20	323	30
8.1	8.1	7.9	7	261	19	326	21			18	14		99	98	43	3	62	4	229	17	264	20
7.17	7.17	8.5	7.4	220	18	269	19			16	14		100	98	47	4	79	6	237	20	300	26
7.6	7.6	8.5	8	143	13	164	15			21	17	1.98	100	97	35	3	44	4	215	18	265	21
7.9	7.9	8.3	7.7	191	15	212	16			20	18		100	99	29	2	39	3	243	19	250	20
7.9	7.9	8.6	8	188	14	242	18	1650	1650	28	24		100	98	32	3	47	4	218	17	315	24
6.6	6.6	8.3	7.9	241	17	258	19			27	23		100	99	33	2	45	3	225	16	232	19
5.57559322	5.80220339	8.0615	7.139833333	230.5	28.28	304.7118644	34.37288136	1604.444444	1578.888889	20.515	16.8445	65.864	97.60333333	93.78833333	219.9	41.55833333	336.7627119	67.40677966	375.2833333	61.89166667	619.6440678	109.1779661
0	0.25	7.5	6.19	8	7	11	11	1060	1060	8.4	8.4	1.42	74	17	16	2	30	3	28	8	38	10
10.6	10.6	8.8	8	485	49	887	62	1880	1880	28	24	321	100	99	2757	540.1	4635	1002	5457	1068	10960	2340
59	59	60	60	60	60	59	59	9	9	60	60	5	60	60	60	60	59	59	60	60	59	59
2.7810109	2.613007956	0.33013518	0.499737191	111.226521	9.589326694	160.1244183	12.13131926	260.6295796	241.5286962	4.269316025	4.354502219	142.6265146	3.918273862	10.9038182	408.0343829	80.61244445	650.7041899	149.0418963	704.5137304	140.3076019	1411.037901	311.8068971
0.498782962	0.450347528	0.040952078	0.069992837	0.48254456	0.339085102	0.525494531	0.352932858	0.162442259	0.15297384	0.208107045	0.258511812	2.165469978	0.040144878	0.116259857	1.85554517	1.939741996	1.932233489	2.21108169	1.877284888	2.26698697	2.277174872	2.855950777
9.41	9.41	8.61	7.9	410.5	42	552	55.2	1880	1824	26.145	23.41	257.4	100	98.715	649.7	134.49	915.8	196.3	726.15	118.6	1184.8	189.1
0.673	1.147	7.6	6.2	16	13.95	26.9	16	1172	1172	12.995	10.776	1.52	91	88.85	24	3	35.9	3.9	59.3	12.95	82.9	16

	Effluent Gross LOW FLOW OCT-MAY			Effluent Gross HIGH FLOW JUN-SEP
	Nitrogen, ammonia total [as N]			Nitrogen, ammonia total [as N]
	DAILY MX			DAILY MX
Date	mg/L		Date	mg/L
			8/31/2011	59.9
			9/30/2011	68
10/31/2011	58			
11/30/2011	31			
12/31/2011	52			
1/31/2012	20.6			
2/29/2012	11.5			
3/31/2012	28.4			
4/30/2012	61.2			
5/31/2012	76			
			6/30/2012	7.91
			7/31/2012	27.3
			8/31/2012	47.5
			9/30/2012	18.2
10/31/2012	11.3			
11/30/2012	5.13			
12/31/2012	8			
1/31/2013	45.1			
2/28/2013	28.8			
3/31/2013	34.9			
4/30/2013	24.8			
5/31/2013	13.3			
			6/30/2013	18
			7/31/2013	213
			8/31/2013	213
			9/30/2013	1.54
10/31/2013	2.3			
11/30/2013	0.21			
12/31/2013	14			
1/31/2014	4.1			
2/28/2014	0.1			
3/31/2014	0.52			
4/30/2014	3			
5/31/2014	0.482			
			6/30/2014	0.258
			7/31/2014	0.13
			8/31/2014	0.11
			9/30/2014	0.13
10/31/2014	0.09			
11/30/2014	0.1			
12/31/2014	0.14			
1/31/2015	0.078			
2/28/2015	0.09			
3/31/2015	0.03			
4/30/2015	0.13			
5/31/2015	0.549			
			6/30/2015	0.01
			7/31/2015	0.883
			8/31/2015	0.112
			9/30/2015	1.01
10/31/2015	0.168			
11/30/2015	0.052			
12/31/2015	0.09			
1/31/2016	0.01			
2/29/2016	0.01			
3/31/2016	0.01			
4/30/2016	0.01			
5/31/2016	0.14			
			6/30/2016	1.07
			7/31/2016	5.22
			8/31/2016	0.15
			9/30/2016	0.096
10/31/2016	0.1			
11/30/2016	0.01			
12/31/2016	4.74			
1/31/2017	0.15			
2/28/2017	0.094			
3/31/2017	0.045			
4/30/2017	1.39			
5/31/2017	0.12			
			6/30/2017	11
			7/31/2017	0.238
			8/31/2017	1.5
Average	1.0330625		Average	1.4660625
Minimum	0.01		Minimum	0.01
Maximum	14		Maximum	11
Count	32		Count	16
Std Dev	2.654232882		Std Dev	2.847674243
CV	2.569285868		CV	1.94239621
95th Percen	4.388		95th Percen	6.665
5th Percenti	0.01		5th Percenti	0.0745

B. Receiving Water Data

Data from Permit Application 12/2/2013

	Upstream	Upstream	Upstream	Upstream	Downstream	Downstream	Downstream
	Temperature	pH	Total Ammonia as N	Alkalinity	Temperature	pH	Total Ammonia as N
	deg C	SU	mg/L	mg/L	deg C	SU	mg/L
3/3/2010		8.39	0.006	60		8.24	0.004
9/8/2010	17.4	8.69	0.218	50	17	8.81	0.198
4/11/2011	7.3	8.69	0.064	40	8.9	8.68	0.061
9/14/2011	20.9	8.3	0.0311	30	20.7	8.3	0.15
4/9/2012	10.7	8.85	0.079	50	9.9	8.82	0.076
9/11/2012	18.7	8.09	0.0475	40	19.5	8.02	0.0419
4/30/2013		8.5	0.01	50		7.9	0.01
9/19/2013	20.7	8.19	0	10	20.7	8.23	0
		Amnia 90th =	0.1207				
Average	15.95	8.4625	0.05695	41.25	16.11666667	8.375	0.0676125
Minimum	7.3	8.09	0	10	8.9	7.9	0
Maximum	20.9	8.85	0.218	60	20.7	8.82	0.198
Count	6	8	8	8	6	8	8
Std Dev	5.641187818	0.267194418	0.070986961	15.52647509	5.38457674	0.353916859	0.072211009
CV	0.353679487	0.031573934	1.246478676	0.376399396	0.334099901	0.042258729	1.068012705
95th Perce	20.85	8.794	0.1207	56.5	20.7	8.8165	0.1812
5th Percer	8.15	8.125	0.0021	17	9.15	7.942	0.0014

	Temp Winter		Temp Summer
3/3/2010			
		9/8/2010	17.4
4/11/2011	7.3		
		9/14/2011	20.9
4/9/2012	10.7		
		9/11/2012	18.7
4/30/2013			
		9/19/2013	20.7
95th Perce	10.53	95th Percentile	20.87
5th Percer	7.47	5th Percentile	17.595

	pH Winter		pH Summer
3/3/2010	8.39		
		9/8/2010	8.69
4/11/2011	8.69		
		9/14/2011	8.3
4/9/2012	8.85		
		9/11/2012	8.09
4/30/2013	8.5		
		9/19/2013	8.19
95th Percentile	8.826	95th Percentile	8.6315
5th Percentile	8.4065	5th Percentile	8.105

Additional data from Dee Hodge 06/29/2017 Email

	Hardness	Dissolved Cadmium	Dissolved Copper	Dissolved Lead	Mercury	Dissolved Silver	Oil and Grease	Cyanide
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
6/7/2007	192	<0.0005	<0.1	<0.005	0.001	<0.05		
6/8/2007							1.58	<0.005

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:

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

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, 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

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

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:

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

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 water quality standards require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10 or 1B3
Chronic aquatic life	7Q10 or 4B3
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Ammonia	30B3 or 30Q10
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

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

Facility Name	City of Burley Industrial WWTP
Facility Flow (mgd)	2.40
Facility Flow (cfs)	3.71

Critical River Flows (IDAPA 58.01.02 03. b)		Annual Crit. Flows	Seasonal Low Flow	Seasonal High Flow	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	343	343	3200	343.0	343.0	343.0	343.0	343.0	343.0	343.0	343.0	343.0	343.0	343.0	343.0
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	338	341	3590	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0
Ammonia	**30B3/30Q10** (seasonal)		347	4840	--	--	--	--	--	--	--	--	--	--	--	--
Human Health - Non-Carcinogen	**30Q5**	405	419	5200	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0
Human Health - carcinogen	**Harmonic Mean Flow**	1588	1116	8383	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0	1,588.0

Receiving Water Data		Notes:	Annual Crit. Flows	Seasonal Low Flow	Seasonal High Flow
Hardness, as mg/L $CaCO_3$	= 157 mg/L	5^{th} % at critical flows			
Temperature, °C	Temperature, °C	95^{th} percentile	20.8	10.53	20.87
pH, S.U.	pH, S.U.	95^{th} percentile	8.8	8.8	8.6

Pollutants of Concern			AMMONIA, default: cold water, fish early life stages	AMMONIA, default: cold water, fish early life stages	AMMONIA, default: cold water, fish early life stages	CHLORINE (Total Residual)	ARSENIC (dissolved) - SEE Toxic BiOp	CADMIUM	CHROMIUM (HEX)	COPPER - SEE Toxic BiOp	NICKEL - SEE Toxic BiOp	ZINC - SEE Toxic BiOp	PHENOL	METHYL BROMIDE	BIS(2-ETHYLHEXYL) PHTHALATE	Whole Effluent Toxicity	NITRATE/NITRITE (N)
Effluent Data	**Number of Samples in Data Set (n)**			32	16	4	3	3	3	3	3	3	3	3	3	6	9
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)			2.6	1.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)			4,388	6,665	750	3	0.2	4	5	5	30	73	3	6.2	23.9	130000
	Calculated 50^{th} % Effluent Conc. (when n>10), Human Health Only																
Receiving Water Data	**90^{th} Percentile Conc., µg/L - (C_u)**			120.7	120.7		0	0	0	0	0	0	0	0	0	0	104
	Geometric Mean, µg/L, Human Health Criteria Only																
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	--	1,844.748	2,650.946	19.	340.	1.809	16.	26.028	685.797	171.728	--	--	--		--
	Aquatic Life Criteria, µg/L	Chronic	--	854.891	610.744	11.	150.	.74	11.	16.689	76.171	173.133	--	--	--	23.8	--
	Human Health Water and Organism, µg/L		--	--	--	--	10.	Narrative	Narrative	1,300.	58.	870.	3,800.	130.	1.2		100,000.
	Human Health, Organism Only, µg/L		--	--	--	--	10.	Narrative	Narrative	--	100.	1,500.	85,000.	3,700.	1.2		--
	Metals Criteria Translator, decimal (or default use	Acute	--	--	--	--	--	.925	.982	.96	.998	.978	--	--	--		--
	Conversion Factor)	Chronic	--	--	--	--	--	.89	.962	.96	.997	.986	--	--	--		--
	Carcinogen (Y/N), Human Health Criteria Only		--	--	--	--	Y	N	N	N	N	N	N	N	Y	--	N
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	--	25%	15%	25%	25%	25%	25%	25%	0%	0%	0%	0%	5%	25%	0%
	Aquatic Life - Chronic	7Q10 or 4B3	--	--	--	25%	25%	25%	25%	25%	0%	0%	0%	0%	5%	25%	0%
	Ammonia	30B3 or 30Q10	--	25%	15%	25%	25%	25%	25%	25%	0%	0%	0%	0%	5%	25%	0%
	Human Health - Non-Carcinogen	30Q5	--	--	--	25%	25%	25%	25%	25%	0%	0%	0%	0%	5%	25%	0%
	Human Health - carcinogen	Harmonic Mean	--	--	--	25%	25%	25%	25%	25%	0%	0%	0%	0%	5%	25%	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	--	24.1	130.3	24.1	24.1	24.1	24.1	24.1	1.0	1.0	1.0	1.0	5.6	24.1	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	--	--	--	23.8	23.8	23.8	23.8	23.8	1.0	1.0	1.0	1.0	5.6	23.8	1.0
	Ammonia	30B3 or 30Q10	--	24.4	196.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Human Health - Non-Carcinogen	30Q5	--	--	--	28.3	28.3	28.3	28.3	28.3	1.0	1.0	1.0	1.0	6.5	28.3	1.0
	Human Health - carcinogen	Harmonic Mean	--	--	--	107.9	107.9	107.9	107.9	107.9	1.0	1.0	1.0	1.0	22.4	107.9	1.0
Aquatic Life Reasonable Potential Analysis																	
σ	$\sigma^2=\ln(CV^2+1)$		--	1.431	1.236	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555
P_n	$=(1\text{-confidence level})^{1/n}$, where confidence level =	**99%**	--	0.866	0.750	0.316	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.464	0.599
Multiplier (TSD p. 57)	$=\exp(z\sigma\text{-}0.5\sigma^2)/\exp[\text{norminv}(P_n)\sigma\text{-}0.5\sigma^2]$, where	**99%**	--	5.7	7.7	4.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	3.8	3.2
Statistically projected critical discharge concentration (C_n)			--	25116.96	51384.34	3552.02	16.87	1.12	22.49	28.11	28.11	168.67	410.44	16.87	34.86	91.26	410666.12
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	--	1158.07	514.18	147.41	0.00	0.04	0.92	1.12	28.06	164.96	0.00	0.00	0.00		0.00
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	--	1146.60	381.53	149.50	0.71	0.04	0.91	1.14	28.03	166.31	410.44	16.87	6.28	3.79	410666.12
Reasonable Potential to exceed Aquatic Life Criteria			--	**YES**	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NA**	**NA**	**NA**	**NO**	**NA**
Aquatic Life Effluent Limit Calculations																	
Number of Compliance Samples Expected per month (n)				4	4	4	4	4	4	4	4	4	4	4	4	4	4
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			--	4	--	4	--	--	--	--	--	--	--	--	--	--	--
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		--	2.600	--	0.600	--	--	--	--	--	--	--	--	--	--	--
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		--	2.600	--	0.600	--	--	--	--	--	--	--	--	--	--	--
Acute WLA, ug/L	C_u = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	--	41,663.0	--	457.8	--	--	--	--	--	--	--	--	--	--	--
Chronic WLA, ug/L	C_u = (Chronic Criteria x MZ_c) - $C_{e\,x}$ (MZ_c-1)	Chronic	--	18,009.4	--	261.4	--	--	--	--	--	--	--	--	--	--	--
Long Term Ave (LTA), ug/L	WLAc x exp(0.5σ^2-zσ), Acute	**99%**	--	4,154.2	--	147.0	--	--	--	--	--	--	--	--	--	--	--
(99^{th} % occurrence prob.)	WLAa x exp(0.5σ^2-zσ); ammonia n=30, Chronic	**99%**	--	6,985.2	--	137.8	--	--	--	--	--	--	--	--	--	--	--
Limiting LTA, ug/L	used as basis for limits calculation		--	4,154.2	--	137.8	--	--	--	--	--	--	--	--	--	--	--
Applicable Metals Criteria Translator (metals limits as total recoverable)			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Average Monthly Limit (AML), ug/L , where % occurrence prob =		**95%**	--	**13,008**	--	**214**	--	--	--	--	--	--	--	--	--	--	--
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		**99%**	--	**41,663**	--	**429**	--	--	--	--	--	--	--	--	--	--	--
Average Monthly Limit (AML), mg/L			--	**13.0**	--	**0.214**	--	--	--	--	--	--	--	--	--	--	--
Maximum Daily Limit (MDL), mg/L			--	**41.7**	--	**0.429**	--	--	--	--	--	--	--	--	--	--	--
Average Monthly Limit (AML), lb/day			--	**260**	--	**4.283**	--	--	--	--	--	--	--	--	--	--	--
Maximum Daily Limit (MDL), lb/day			--	**834**	--	**8.594**	--	--	--	--	--	--	--	--	--	--	--
Human Health Reasonable Potential Analysis																	
σ	$\sigma^2=\ln(CV^2+1)$						0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555	0.555
P_n	$=(1\text{-confidence level})^{1/n}$ where confidence level =	**95%**					0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.607	0.717
Multiplier	$=\exp(2.326\sigma\text{-}0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma\text{-}0.5\sigma^2]$, prob. =	**50%**					1.205	1.205	1.205	1.205	1.205	1.205	1.205	1.205	1.205	0.860	0.728
Dilution Factor (for Human Health Criteria)							107.9	28.3	28.3	28.3	1.0	1.0	1.0	1.0	22.4	107.9	1.0
Max Conc. at edge of Chronic Zone, ug/L (C_u)							0.033	0.009	0.170	0.213	6.024	36.146	87.955	3.615	0.334	0.191	94,583.352
Reasonable Potential to exceed HH Water & Organism							**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Reasonable Potential to exceed HH Organism Only							**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Appendix E. CWA 401 State Certification

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

650 Addison Avenue West, Suite 110 • Twin Falls, Idaho 83301 • (208) 736-2190
www.deq.idaho.gov

Governor Brad Little
Director John H. Tippets

May 7, 2019

Mr. Michael Lidgard
U.S. EPA, Region 10
Office of Water and Watersheds
NPDES Permits Unit (OWW-191)
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

Subject: DRAFT §401 Water Quality Certification: Burley Industrial Wastewater Treatment Plant (NPDES Permit No. ID0000663)

Dear Mr. Lidgard:

The Twin Falls Regional Office of the Idaho Department of Environmental Quality (DEQ) has reviewed the draft permit and fact sheet for the above-referenced U.S. EPA proposed draft permit for industrial discharge. Section 401 of the Clean Water Act requires that states issue certifications for activities which are authorized by a federal permit and which may result in the discharge to surface waters. In Idaho, DEQ is responsible for reviewing permit activities and evaluating whether the activity will comply with Idaho's Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal discharge permit cannot be issued until DEQ has provided certification or waived certification either expressly, or by taking no action.

This letter is to inform you that DEQ has prepared draft §401 certification in preparation for EPA's open public comment period.

If you have any questions or concerns, please feel free to contact Sonny Buhidar (208) 736-2190 or via email at Balthasar.Buhidar@deq.idaho.gov.

Sincerely,

Sue Switzer
Regional Administrator

SS:BBB:sg

c: Susan Poulsom, U.S. EPA Region 10
John Drabek, U.S. EPA

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

May 7, 2019

NPDES Permit Number(s): ID-000066-3 / City of Burley Industrial WWTP

Receiving Water Body: Snake River

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

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

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

Antidegradation Review

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

- Tier 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 Burley Industrial WWTP discharges the following pollutants of concern: biological oxygen demand – 5 day (BOD_5), total suspended solids (TSS), *Escherichia coli* (*E. coli*) bacteria, total residual chlorine (TRC), pH, total ammonia (NH_3), oil & grease (O&G), total phosphorus (TP), temperature, dissolved oxygen (DO), total nitrate + nitrite (NOx), total recoverable arsenic (As), total recoverable cadmium (Cd), dissolved chromium VI (Cr), total recoverable copper (Cu), total recoverable nickel (Ni), total recoverable zinc (Zn), phenol, methyl bromide, and bis (2-ethylhexyl) phthalate. Effluent limits have been developed for BOD_5, TSS, *E. coli*, TRC, pH, NH_3, and TP.

The following parameters do not have effluent limits, but require monitoring in the NPDES permit: temperature, DO, NOx, As, Cd, Cr, Cu, Ni, Zn, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate. Surface water monitoring is required for the following pollutants: NH_3, temperature, pH, O&G, As, Cd, Cr, Cu, Ni, and Zn (Permit Table 2).

Receiving Water Body Level of Protection

The City of Burley Industrial WWTP discharges to the Snake River within the Lake Walcott Subbasin assessment unit (AU) ID17040209SK001_07, Snake River – Heyburn /Burley Bridge to Milner Dam). This AU has the following designated beneficial uses: warm water aquatic life (WWAL) and primary contact recreation (IDAPA 58.01.02.150.11). 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 one or more of its assessed uses. The aquatic life use is not fully supported, cause of impairment is TP. As such, DEQ will provide Tier I protection (IDAPA 58.01.02.051.01) for the aquatic life use.

The contact recreation beneficial use is unassessed. Water bodies identified in the 2014 Integrated Report as not assessed will be provided an appropriate level of protection on a case-by-case basis using information available at the time of a proposal for a new or reissued permit or license (IDAPA 58.01.02.052.05). DEQ reviewed data in the Lake Walcott TMDL and determined the following:

- TSS meets the instream target of less than or equal to 25 mg/L Avg Mon about 82% of the time; but less than or equal to 40 mg/L Max Daily about 98% of the time.
- DO meets instream criteria of greater than 5 mg/L about 100% of the time.
- The pH meets the instream criteria of pH 6.5-9.0 about 100% of the time.

- Water temperature meets the WWAL criteria of less than 29°C about 100% of the time.
- For *E. coli*, DEQ was able to determine the support status for contact recreation based on data collected during 2007-2010 and 2016 (for a total of 111 samples). An analysis of the data indicates that *E. coli* values were all less than the trigger value of 406 cfu/100 mL for instantaneous samples, indicating that contact recreation is met and fully supporting.

Based on the *E. coli* analysis, DEQ concludes that primary contact recreation is fully supporting and will therefore provide Tier II protection for contact recreational use.

Protection and Maintenance of Existing Uses (Tier I Protection)

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 Burley Industrial WWTP permit are set at levels designed to ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL. 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 *Lake Walcott Subbasin Assessment, Total Maximum Daily Load and Implementation Plan* (DEQ, 2000) establishes wasteload allocations for TSS and TP. The TMDL established a TP load allocation (WLA) of 359 lbs/day for the J.R. Simplot Company. Simplot ceased operation in 2003 and EPA terminated the NPDES permit; however, one year later, the plant and existing phosphorus WLA transferred to the City of Burley when they requested NPDES coverage for their industrial operations. This phosphorus allocation was first utilized in the 2005 Burley Industrial NPDES permit and is incorporated into the 2009 discharge permit as well as the current permit. These WLAs are designed to ensure the Snake 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 Burley Industrial WWTP permit are set at levels that comply with these wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the City of Burley Industrial WWTP permit are set at levels designed to ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the Lake Walcott TMDL. Therefore, DEQ has determined the permit will protect and maintain existing and

designated beneficial uses in the Snake River in compliance with the Tier 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 Snake River is considered high quality for primary contact recreation. As such, the water quality relevant to primary contact recreation uses of the Snake 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 contact recreation use of the Snake River (IDAPA 58.01.02.052.05). These include the following: *E. coli*, NH_3, TP, As, Cu, Ni, Zn, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate**.** However, effluent limits are not set in the existing and proposed permits for As, Cu, Ni, Zn, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate as shown in Table 1 below.

For a reissued permit or license, the effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as authorized in the current permit and the water quality that would result from the activity or discharge as proposed in the reissued permit or license (IDAPA 58.01.02.052.06.a). For a new permit or license, the effect on water quality is determined by reviewing the difference between the existing receiving water quality and the water quality that would result from the activity or discharge as proposed in the new permit or license (IDAPA 58.01.02.052.06.a).

If degradation will occur, DEQ must then determine whether the degradation is significant. A socioeconomic justification is not required for insignificant degradation. If the discharge will cause a cumulative decrease in assimilative capacity that is equal to or less than 10% from conditions in the Snake River as of July 1, 2011, then DEQ may determine the degradation is insignificant, taking into consideration the size and character of the discharge and the magnitude of its effect on the receiving water (IDAPA 58.01.02.052.08.a).

Pollutants with Limits in the Current and Proposed Permit: E. coli, NH_3, and TP

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 or license (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 Burley Industrial WWTP permit, this means determining the permit's effect on water quality based upon the limits for those pollutants listed with effluent limits in the current and proposed permits. Table 1 provides a summary of the current permit limits and the proposed or reissued permit limits. See Appendix A for significance determination of proposed design flow for the pollutants with effluent limitations for *E. coli* and NH_3.

As shown in Appendix A of this certification, the antidegradation analysis indicates that the Burley Industrial WWTP will reduce the assimilative capacity of all these pollutants by less than 1%. Since this value is less than 10% of the cumulative assimilative capacity since July 1, 2011 and determined by the Department to be an insignificant increase, no alternatives analysis or socioeconomic justification are required.

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

Parameter	Units	Previous NPDES Permit 06/01/2009—05/31/2014			Draft NPDES Permit 2019-2023			Change
		Avg Mon	Avg Weekly	Max Daily	Avg Mon	Avg Weekly	Max Daily	
POLLUTANTS WITH EFFLUENT LIMITS								
E. coli	cfu/100 mL	126 Geomean	-	406 Instant Max	126 Geomean	-	406 Instant Max	No Change
Total NH_3 Oct 1-May 31	mg/L	Report	-	Report	13	-	41.7	Increase
	lbs/day	292	-	658	260	-	658	Reduction
Total NH_3 Jun 01-Sep 31	mg/L	Report	-	Report	Report	-	Report	No Change
	lbs/day	1759	-	3966	1759	-	3966	No Change
TP	mg/L	Report	Report	-	Report	Report	-	No Change
	lbs/day	359	539	-	359	539	-	No Change
PARAMETERS TO BE REPORTED ONLY								
TR-As	mg/L	Report	-	Report	Report	-	Report	No Change
TR-Cu	mg/L	Report	-	Report	Report	-	Report	No Change
TR-Ni	mg/L	Report	-	Report	Report	-	Report	No Change
TR-Zn	mg/L	Report	-	Report	Report	-	Report	No Change
Phenol	mg/L	Report	-	Report	Report	-	Report	No Change
Methyl Bromide[B]	µg/L	Report	-	Report	Report	-	Report	No Change
Bis (2-ethyl hexyl) Phthalate[A]	µg/L	Report	-	Report	Report	-	Report	No Change

This table does not reflect the monitoring frequency for each parameter, but only compares the existing permit to the draft permit. TR-As = Total Recoverable Arsenic. TR-Cd = Total Recoverable Cadmium. TR-Cu = Total Recoverable Copper. Ni = Nickel. TR-Ni = Total Recoverable Nickel. Zn = Zinc. TR-Zn = Total Recoverable Zinc. E. coli = Escherichia coli. NH_3 = Total Ammonia. TP = Total Phosphorus.

The proposed permit limits for pollutants of concern that have limits in the current permit, namely, *E. coli*, TP and ammonia (June 1 – Sept 31), are the same as, or more stringent than, those in the current permit ("NC" in change column). Therefore, DEQ has determined that no adverse change in water quality and no degradation will result from the discharge of these pollutants.

Pollutants with No Limits: As, Cu, Ni, Zn, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate

There are several pollutants of concern (As, Cu, Ni, Zn, phenol, methyl bromide, and bis (2-ethylhexyl) phthalate) relevant to Tier II protection of recreation that currently are not limited and for which the proposed permit also contains no limit (Table 1). For such pollutants, a change in water quality is determined by reviewing whether changes in production, treatment, or operation that will increase the discharge of these pollutants are likely (IDAPA 58.01.02.052.06.a.ii). There have been no changes in the industrial sector of Burley Industrial that might increase the discharge concentration of these pollutants. A Tier II analysis, is only required if the degradation is determined to be significant and significant degradation occurs when the discharge of the pollutant will cumulatively decrease the remaining assimilative capacity by more than 10% or, if less than 10%, when determined by the Department to be significant (IDAPA 58.01.02.052.08.a). DEQ has determined there will be no significant

degradation from any of these pollutants. As such, the proposed permit should maintain the existing high water quality in the Snake River.

In summary, 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

Compliance Schedules

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water-quality based effluent limits issued in a permit for the first time. EPA determined that the Burley Industrial WWTP has the reasonable potential to cause or contribute to an excursion of the water quality standard for *E. coli.* A two year compliance schedule will give the facility time to upgrade several components to their discharge system, one of which includes a new flow meter capable of handling high flow conditions. High water levels in the Snake River have caused a backup of river water in the discharge area which has contributed to false *E. coli* readings for the facility.

DEQ authorizes a compliance schedule as forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

1. The permittee must achieve compliance with the *E. coli* limitations of Permit part I.B, Table 1, Effluent Limitations and Monitoring Requirements for Upgraded Facility, by 2 years from the effective date of this permit.

2. Until compliance with the effluent limits is achieved, at a minimum, the permittee must complete the tasks and reports listed in Table 2 below.

Table 2. Tasks Required Under the Schedule of Compliance for E. coli.

Task No.	Due By	Task Activity
1	Due 1 Year from Effective Date of Permit	**Annual Report** Deliverable: The permittee must submit an Annual Report as described in section II. C. 3. of the NPDES permit to the EPA and DEQ.
2	Due 2 Years from Effective Date of Permit	**Meet Effluent Limitation for E. coli** Construction and Optimization of process such that compliance with the E. coli effluent limitations are achieved. Deliverable: The permittee must provide written notice to the EPA and the DEQ that the E. coli effluent limitations are achieved.

3. The permittee must submit an Annual Report of Progress which outlines the progress made towards reaching the compliance date for the *E. coli* effluent limitations. The Annual Report of Progress must be submitted by one year after effective date of permit. See also part III. K. of the NPDES permit, Compliance Schedules. At a minimum, the Annual Report of Progress must include:

a. An assessment of the previous year of *E. coli* data and comparison to the effluent limitations.

b. A report on progress made towards meeting the effluent limitations, including the applicable deliverable required under paragraph 2 of the NPDES permit (Table 4. Tasks Required Under the Schedule of Compliance for *E. coli*).

c. Further actions and milestones targeted for the upcoming year.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes mixing zones summarized in Table 3 that utilizes 0% for As, Cd, Cr-VI, Cu, zinc, phenol, methyl bromide, and NOx; 5% for bis (2-ethylhexyl phthalate; 15% for NH3 (May 1-Nov 30) and 25% for NH3 (Oct 1- Apr 30) of the critical flow volumes of Snake River. The reasonable potential analysis and water quality based effluent limit calculations conducted by EPA were based on mixing zones shown in Table 3.

Table 3. Mixing Zones Authorized by DEQ

Criteria Type	Critical Low Flow Type	Critical Low Flow, cfs	Mixing Zone (% of Critical Low Flow)	Dilution Factor (2.4 mgd)	Dilution Factor (4.0 mgd)
Acute AL	1Q10	343	25%	24.1	14.9
Acute AL	1Q10	343	5%	5.6	3.8
Chronic AL	7Q10	338	25%	23.8	14.7
Chronic AL	7Q10	338	5%	5.6	3.7
Chronic AL (NH_3: Oct-May)	30Q10	347	25%	24.4	15.0
Chronic AL (NH_3: Jun-Sep)	30Q10	4840	15%	196.5	118.3
Human Health Noncarcinogen	30Q5	405	25%	28.3	17.4
Human Health Noncarcinogen	30Q5	405	5%	6.5	4.3
Human Health Carcinogen	Harmonic Mean Flow	1588	25%	107.9	65.2
Human Health Carcinogen	Harmonic Mean Flow	1588	5%	22.4	13.8
AL = Aquatic Life. See Table 11 of EPA's 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 Dr. Balthasar Buhidar, Twin Falls Regional Office, at (208) 736-2190, or at Balthasar.buhidar@deq.idaho.gov.

"DRAFT"

Sue Switzer
Regional Administrator
Twin Falls Regional Office