FACT SHEET

The United States Environmental Protection Agency (EPA)
Proposes To Reissue
A National Pollutant Discharge Elimination System (NPDES) Permit to:

The City of Homedale
P.O. Box 757
Homedale, Idaho 83628

NPDES Permit Number:	ID-002042-7
Public Notice Start Date:	March 1, 2013
Public Notice Expiration Date:	April 1, 2013
Technical Contact:	John Drabek, 206-553-8257, drabek.john@epa.gov 1-800-424-4372 ext. 3-8257 (within Region 10) drabek.john@epa.gov

The EPA Proposes To Reissue NPDES Permit

The EPA proposes to reissue the NPDES permit to the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. In order to ensure protection of water quality and human health, the permit place limits on the types and amounts of pollutants that can be discharged from each facility.

This Fact Sheet includes:

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

State Certification for Facilities that Discharge to State Waters

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

Idaho Department of Environmental Quality
Boise Regional Office
1445 N. Orchard Street
Boise, Idaho 83706

ph: (208) 373-0550
fx: (208) 373-0287

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 Region 10's Director for the Office of Water and Watersheds will make a final decision regarding permit reissuance. 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 comments are received, the EPA will address the comments and issue the permit. In such a case, the permit will become effective at least 30 days after the issuance date unless an appeal is submitted to the Environmental Appeals Board within 30 days.

Documents are Available for Review.

The draft permit and fact sheet are posted on the Region 10 website at http://yosemite.epa.gov/r10/WATER.NSF/NPDES+Permits/DraftPermitsID Copies may also be requested by writing to the EPA at the Seattle address below, by e-mailing washington.audrey@epa.gov, or by calling Audrey Washington at 206-553-0523 or (800) 424-4372 ext 0523 (within Alaska, Idaho, Oregon, & Washington). Copies may also be inspected and copied at the offices below between 8:30 a.m. and 4:00 P.M., Monday through Friday, except federal holidays. In Seattle, visitors report to the 12th floor Public Information Center.

United States Environmental Protection Agency
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Seattle, Washington 98101
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EPA Idaho Operations Office
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IDEQ
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For technical questions regarding the permit or fact sheet, contact John Drabek at the phone number or e-mail address at the top of this fact sheet. Those with impaired hearing or speech may contact a TDD operator at 1-800-833-6384 and ask to be connected to the appropriate phone number. Persons with disabilities may request additional services by contacting John Drabek.

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I. APPLICANT{ TC \l1 "I. APPLICANT}

A. General Information

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

Facility Name:	City of Homedale Wastewater Treatment Plant
Mailing Address:	P.O. Box 757, Homedale, Idaho 83628
Facility Address:	31 W. Wyoming Avenue, Homedale, Idaho 83628
Contact:	Larry Bauer, Public Works Supervisor, (208) 337 – 4641

B. Permit History

The most recent NPDES permit for the City of Homedale was issued on February 27, 2004 became effective on May 1, 2004 and expired on April 30, 2009. An NPDES application for permit issuance was submitted by the permittee on October 31, 2008. The EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR 122.6., the permit has been administratively extended and remains fully effective and enforceable.

II. FACILITY INFORMATION{ TC \l1 "II. FACILITY INFORMATION}

A. Treatment Plant Description

The City of Homedale (City) owns, operates and has maintenance responsibility for Homedale Wastewater Treatment Plant (WWTP) that treats domestic sewage that is primarily from local residents and commercial establishments through a separated sanitary sewer system. There are no significant industrial users.

The wastewater treatment plant consists of a lagoon system followed by chlorination. Flow is to two aerated lagoons, followed by a stabilization lagoon. Disinfection is by chlorination in a contact chamber prior to discharge.

The facility serves a population of about 2,750 and has a design flow rate of 0.45 mgd.

The City estimates that inflow and infiltration is about 50,000 gallons per day. To address inflow and infiltration the City has a program to replace aged collection lines; the City funds the program with an existing sewer bond.

B. Compliance History

A review of the Discharge Monitoring Reports (DMRs) from May 2004 to November 2011 found the following violations of effluent limits:

<u>BOD_5</u>

Multiple violations of the monthly average concentration limit of 45 mg/L, with a maximum of 88 in November 2005.

Multiple violations of the weekly average limit of 65 mg/L, with a maximum of 88 in November 2005.

A violation of the monthly average loading limit of 169 lb/day, at 177 in November 2005.

pH

A violation of the instantaneous maximum of 9.0, at 9.3 in September 2006.

Total Suspended Solids

Multiple violations of the monthly average concentration limit of 45 mg/L, with a maximum of 92 in March 2006.

Multiple violations of the weekly average concentration limit of 65 mg/L, with a maximum of 92 in March 2006.

E. coli

Multiple violations of the monthly geometric mean limit of 126 colonies/100 ml, with maximum at 2,400 in January 2005 and November 2008.

Multiple violations of the instantaneous maximum limit of 406 colonies/100 ml, with maximum at 2,400 in January 2005, December 2006 and November 2008.

BOD_5, percent removal

Multiple violations of the average monthly limit of 65% minimum removal, including 57% in October 2006 and March 2011.

Total Suspended Solids, percent removal

Multiple violations of the average monthly limit of 65% minimum removal, including 40.6% in April 2005 and 46% in September 2006.

The EPA issued a notice of continuing noncompliance for violations of the effluent limitations on June 10, 2011.

III. RECEIVING WATER{ TC \l1 "III. RECEIVING WATER}

This facility discharges to the Snake River in the City of Homedale, Idaho.

The treated effluent from the City of Homedale's wastewater treatment facility is discharged continuously to the Snake River at approximate river mile 412, which lies within the Middle Snake-Succor Subbasin SW-1, Snake River, River Mile 425 to Idaho Oregon state line to Idaho Oregon state line. Beneficial uses for this segment of the Snake River are cold water communities, primary contact recreation and domestic, agricultural and industrial water supply. The outfall is located at latitude 43° 38' 02" N and longitude 116° 57' 26" W.

A. Low Flow Conditions

The low flow conditions of a water body are used to assess the need for and develop water quality based effluent limits (see Appendix B of this fact sheet for additional information on flows). The EPA used ambient flow data collected at the USGS station 13172500, Snake River near Murphy, Idaho and the EPA's DFLOW 3.1b model to calculate the low flow conditions for the Snake River at Homedale.

The 1Q10, 7Q10, 30B3, 30Q5, and harmonic mean flow rates of Snake River are 4440 cfs, 4680 cfs, 5030 cfs, 5320 cfs and 8420 cfs, respectively. See Appendix B for more information. This is upstream of the City of Homedale outfall by about 40 miles, but the next closest USGS station on the Snake is nearly 40 miles downstream of Homedale. The period of record for these calculations was 1983 to 2010.

Because the chronic criterion for ammonia is a 30-day average concentration not to be exceeded more than once every three years, EPA has used the 30B3 for the chronic ammonia criterion instead of the 7Q10. The 30B3 is a biologically-based design flow intended to ensure an excursion frequency of once every three years for a 30-day average flow rate.

B. Water Quality Standards{ TC \l2 "B. Water Quality Standards}

Overview

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet water quality standards. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy.

The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

Designated Beneficial Uses

This facility discharges to the Middle Snake-Succor Subbasin (HUC 17050103) SW-1, Snake River, River Mile 425 to Idaho/Oregon border (assessment unit ID: Idaho/Oregon border 17050103SW001_07 Snake River - Marsing (RM 425). At the point of discharge, the Snake River is protected for the following designated uses (IDAPA 58.01.02.130.12):

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

In addition, the Idaho Water Quality Standards state that all waters of the State of Idaho are protected for industrial and agricultural water supply (Section 100.03.b and c.), wildlife habitats (100.04) and aesthetics (100.05).

Surface Water Quality Criteria

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

- The narrative criteria applicable to all surface waters of the State are found at IDAPA 58.01.02.200 (General Surface Water Quality Criteria).

- The numeric criteria for toxic substances for the protection of aquatic life and primary contact recreation are found at IDAPA 58.01.02.210 (Numeric Criteria for

Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use).

- Additional numeric criteria necessary for the protection of aquatic life can be found at IDAPA 58.01.02.250 (Surface Water Quality Criteria for Aquatic Life Use Designations).

- Numeric criteria necessary for the protection of recreation uses can be found at IDAPA 58.01.02.251 (Surface Water Quality Criteria for Recreation Use Designations).

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

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

Antidegradation

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

C. Water Quality Limited Waters

Any waterbody for which the water quality does not or is not expected to meet, applicable water quality standards is defined as a "water quality limited segment."

Section 303(d) of the Clean Water Act (CWA) requires states to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited segments. A TMDL is a detailed analysis of the water body to determine its assimilative capacity. The assimilative capacity is the loading of a pollutant that a water body can assimilate without causing or contributing to a violation of water quality standards. Once the assimilative capacity of the water body has been determined, the TMDL will allocate that capacity among point and non-point pollutant sources, taking into account natural background levels and a margin of safety. Allocations for non-point sources are known as "load allocations" (LAs). The allocations for point sources, known as "waste load allocations" (WLAs), are implemented through effluent limitations in NPDES permits. Effluent limitations for point sources must be consistent with applicable TMDL allocations.

The State of Idaho's 2010 Integrated Water Quality Monitoring and Assessment Report (Integrated Report), designates this segment of the Snake River on the 303(d) list as impaired for nutrient/eutrophication and temperature. The State of Idaho developed the Mid Snake River/Succor Creek Subbasin Assessment and TMDL (IDEQ), April 2003 (TMDL). This TMDL reported that the Snake River from Swan Falls to Boise River, the segment including the Homedale WWTP discharge outfall, was impaired by temperature, nutrients, dissolved

oxygen. The Subbasin Assessment established a TMDL for nutrients, and concluded that dissolved oxygen would be addressed by the nutrient TMDL. The TMDL proposed no action for flow alteration, and listed temperature as a concern. EPA approved this TMDL in January 2004. The TMDLs resulted in the following Waste Load Allocation for the Homedale WWTP: Total Phosphorus - 5 kg/day. This allocation was repeated in the Mid Snake River / Succor Creek Subbasin, Five-Year Review of 2003 and 2007 Total Maximum Daily Loads, September 2011.

IV. EFFLUENT LIMITATIONS{ TC \l1 "IV. EFFLUENT LIMITATIONS}

A. Basis for Permit Effluent Limits { TC \l2 "A. Basis for Permit Effluent Limits}

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

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limitations that are in the draft permit:

There must be no discharge of any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water. Table 1 below presents the proposed effluent limits for 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), *Escherichia coli (E. coli)*, pH, total residual chlorine and the minimum percent removal requirements for BOD_5 and TSS.

Table 1
Effluent Limitations

Parameters	Average Monthly Limit	Average Weekly Limit	Minimum Percent Removal[1]	Daily Maximum Limit
BOD_5	45 mg/L	65 mg/L	65%	--
	169 lbs/day	244 lbs/day		--
TSS	45 mg/L	65 mg/L	65%	--
	169 lbs/day	244 lbs/day		--
E. coli Bacteria	126 colonies /100mL[2]	--	--	406 colonies /100mL[3]
Total Phosphorus May 1- September 30	11 lb/day	17 lb/day		
Total Residual	0.5 mg/L	0.75 mg/L		

Table 1 Effluent Limitations				
Parameters	**Average Monthly Limit**	**Average Weekly Limit**	**Minimum Percent Removal[1]**	**Daily Maximum Limit**
Chlorine[2]	1.9 lb/day	2.8 lb/day		
pH	6.5 – 9.0 standard units			

1. Percent removal is calculated using the following equation: ((influent - effluent) / influent) x 100, this limit applies to the average monthly values.
2. The monthly average for *E. coli* is the geometric mean of all samples taken during the month, based on a minimum of five samples, taken every 3-7 days within a calendar month.
3. Instantaneous maximum limit

Except for the addition of total phosphorus effluent limitations these proposed effluent limitations are identical to the effluent limitations in the current permit for the City of Homedale. Refer to Appendix B for the derivation of the effluent limits.

V. MONITORING REQUIREMENTS { TC \l1 "V. MONITORING REQUIREMENTS}

A. Basis for Effluent and Surface Water Monitoring Requirements{ TC \l2 "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 is also required to characterize the effluent to determine if additional effluent limitations are required and to monitor effluent impacts on receiving water quality.

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

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

B. Effluent Monitoring Requirements

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

Table 2 below presents the proposed effluent monitoring requirements for the City. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

BOD$_5$, TSS, *E. coli*, Flow, pH, Total Phosphorus and Total Residual Chlorine

The permit requires monitoring BOD$_5$, TSS, *E. coli*, flow, pH, phosphorus and total residual chlorine to determine compliance with the effluent limits; it also requires monitoring of the influent for BOD$_5$ and TSS to calculate monthly removal rates.

Ammonia

Ammonia monitoring is necessary to generate data used in determining a reasonable potential for exceeding water quality standards. Ammonia effluent levels also provide an indication of the operational efficiency of the wastewater treatment plant. In the proposed permit, ammonia effluent sampling will once again be required once per month, but extended to the entire term of the permit. The City does not have a reasonable potential to violate water quality standards for ammonia, so the proposed permit contains no effluent limits for ammonia.

Temperature

Continuous temperature monitoring is required to characterize the discharges for temperature to the Snake River listed for temperature.

Table 2
Effluent Monitoring Requirements{ TC \f 1 "Table 2: Effluent Monitoring Requirements}

Parameter	Unit	Sample Location	Sample Frequency	Sample Type
Flow	mgd	Effluent	Continuous	Recording
BOD$_5$	mg/L	Influent and Effluent[1]	1/week	Grab
	lbs/day		1/week	Calculation
	% Removal	---	1/month	Calculation
TSS	mg/L	Influent and Effluent[1]	1/week	Grab
	lbs/day		1/week	Calculation
	% Removal	---	1/month	Calculation
pH	standard units	Effluent	1/week	Grab
E.coli	colonies/100 ml	Effluent	5/month	Grab
Total Residual Chlorine	mg/L	Effluent	1/week	Grab
Temperature	°C	Effluent	Continuous	Recording
Total Phosphorus as P	mg/L	Effluent	1/week	Grab
Total Ammonia as N[3]	mg/L	Effluent	1/month	Grab
NPDES Application Form 2A Effluent Testing Data	mg/L	Effluent	3x/5 years	See footnote 2

1. Influent and effluent composite samples shall be collected over approximately the same time period.
2. For Effluent Testing Data, in accordance with instructions in NPDES Application Form 2A, Part B.6.

Surface water monitoring is discontinued. The monitoring frequency is increased from monthly to weekly for TSS and BOD_5 to determine compliance with the weekly effluent limitations. Temperature monitoring is increased from grab sampling for one year to continuous monitoring for the term of the permit. The duration of ammonia and total phosphorus monitoring is extended from one year to the term of the permit. The monitoring frequency is increased from once per month to once per week for total phosphorus to determine compliance with the weekly effluent limitation.

VI. SLUDGE (BIOSOLIDS) REQUIREMENTS

The EPA Region 10 separates wastewater and sludge permitting. Under the CWA, the EPA has the authority 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.

In the absence 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. Since the 40 CFR Part 503 regulations are self-implementing, the permittees must comply with them whether or not a permit has been issued.

VII. OTHER PERMIT CONDITIONS{ TC \l1 "VII. OTHER PERMIT CONDITIONS}

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the permittee to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The Permittee is required to update the Quality Assurance Plan for the City within 90 days of the effective date of the final permit. The Quality Assurance Plan must include standard operating procedures the permittee will follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and be made available to the EPA and the IDEQ upon request.

{ TC \l2 "A. Quality Assurance Plan}The federal regulation at 40 CFR §122.41(e) requires the permittee to develop procedures to ensure that the monitoring data submitted to the EPA are accurate and to explain data anomalies if they occur. The permittee is required to develop or update and implement a Quality Assurance Plan within 90 days of the effective date of the final permit. The Quality Assurance Plan shall consist of standard operating procedures that the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis and data reporting. The plan shall be retained on site and be made available to the EPA and IDEQ upon request.

B. Operation and Maintenance Plan Implementation{ TC \l2 "B. Operation and Maintenance Plan}

The permit requires the Permittee 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 its facility within 180 days of the effective date of the final permit. The plan shall be retained on site and made available to the EPA and IDEQ upon request. Any changes occurring in the operation of the plant shall be reflected within the Operation and Maintenance plan.

C. Electronic Submission of Discharge Monitoring Reports

The draft permit includes new provisions to allow the permittee the option to submit Discharge Monitoring Report (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. NetDMR allows participants to discontinue mailing in paper forms under 40 CFR § 122.41 and § 403.12. The permittee may use NetDMR after requesting and receiving permission from EPA Region 10.

Under NetDMR, all reports required under the permit are submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it is no longer required to submit paper copies of DMRs or other reports to EPA and IDEQ.

EPA encourages permittees to sign up for NetDMR, and currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: http://www.epa.gov/netdmr.

D. Standard Permit Provisions { TC \l2 "F. Additional Permit Provisions}

Sections III, IV, and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are based on federal regulations, they cannot be challenged in the context of an individual NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording and reporting requirements, compliance responsibilities and other general requirements.

VIII. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Oceanic and Atmospheric Administration Fisheries (NOAA) and the U.S. Fish and Wildlife Service (USFWS) if their actions could adversely affect any threatened or endangered species.

In an e-mail dated January 21, 2009, NOAA Fisheries stated that there are no threatened or endangered species under NOAA's jurisdiction in the Snake River drainage upstream of the Hells Canyon Dam, which is located at river mile 247.5. The City of Homedale outfall is located at approximately river mile 415, more than 150 miles upstream from the nearest ESA-listed threatened or endangered species under NOAA's jurisdiction. Therefore, the reissuance of this permit will have no effect on any listed threatened or endangered species under NOAA's jurisdiction.

Based on the USFWS website, Owyhee County, location of the City of Homedale discharge, contains threatened Bull Trout, along with endangered Bruneau hot spring snail and

endangered Snake River physa snail. The effluent limits are the more stringent of technology-based or water-quality based values, and the design flow of the City of Homedale WWTP is 0.45 mgd, compared to typical river flows of the Snake River in the vicinity of 49,000 mgd. Therefore, the EPA again determines that the discharges from the City's WWTP will have no effect on listed species.

B. Essential Fish Habitat{ TC "B. Essential Fish Habitat" }

Essential fish habitat (EFH) includes 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 National Marine Fisheries Service when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. The EFH regulations define an adverse effect as any impact which reduces quality 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.

Based on the USFW website, Owyhee County contains critical habitat for the threatened fish species Bull Trout. A December 2003 BE concluded the that the action of permit issuance for the City of Marsing Wastewater Treatment Plant, upstream of the City of Homedale by about 9 river miles, would have no effect on Bull Trout habitat. The BE for Marsing reported that effluent limits were the more stringent of technology-based or water-quality based values, and that the design flow of the City of Marsing WWTP was 0.3 mgd, compared to typical Snake River flows in the vicinity of 49,000 mgd or more. The flow and effluent limits in the proposed City of Homedale permit are similar and to and in the vicinity to those of Marsing. Therefore, the EPA determines that the discharges from the City of Homedale WWTP will have no effect on listed EFH.

C. State Certification

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

D. Permit Expiration

The permit will expire five years from the effective date of the permit.

IX. DEFINITIONS AND ACRONYMS

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
AML	Average Monthly Limit
BOD_5	Biochemical oxygen demand, five-day

ºC	Degrees Celsius
cfs	Cubic feet per second
CFR	Code of Federal Regulations
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ml	milliliters
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit (depending on the context)
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
s.u.	Standard Units
TMDL	Total Maximum Daily Load
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document (EPA, 1991)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet radiation
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WWTP	Wastewater treatment plant

X. REFERENCES{ TC \l1 "IX. REFERENCES}

1. City of Homedale, ID, NPDES permit, effective May 1, 2004 to April 30, 2009.
2. Idaho Administrative Procedures Act (IDAPA), 2006. Section 58, Water Quality Standards and Wastewater Treatment Requirements. Idaho Department of Environmental Quality Rules, Title 01, Chapter 02.
3. U.S. EPA, 1973. *Water Quality Criteria 1972* (EPA R3-73-033).
4. EPA. 1991. Technical Support Document for Water Quality-based Toxics Control. US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.
5. EPA, 2010. U.S. EPA NPDES Permit Writer's Manual, US Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

6. U.S. EPA, December 2003, Biological Evaluation for Issuance of a NPDES Permit for the City of Marsing Wastewater Treatment Plant, Marsing, Idaho.
7. Idaho Department of Environmental Quality, Boise Regionl Office, *Mid Snake River/Succor Creek Subbasin Assessment and TMDL*, April 2003

Appendix A – Location Map

Appendix B – Basis for Effluent Limitations

The following discussion explains in more detail the statutory and regulatory basis for the technology and water quality-based effluent limits in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general and Part C discusses facility specific water quality-based effluent limits.

A. Technology-Based Effluent Limits

The CWA requires POTWs to meet requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," which all POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS and pH. The federally promulgated secondary treatment effluent limits are listed in Table B-1.

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

Parameter	Average Monthly Limit	Average Weekly Limit	Range
BOD_5	30 mg/L	45 mg/L	---
TSS	30 mg/L	45 mg/L	---
Removal Rates for BOD_5 and TSS	85% (minimum)	---	---
pH	---	---	6.0 - 9.0 s.u.

In addition, federal regulations include special considerations to allow "treatment equivalent to secondary," for treatment facilities with waste stabilization ponds (lagoons) and trickling filters. These provisions allow alternative limits for BOD_5 and TSS for such facilities, provided the following requirements are met (40 CFR 133.101(g) and 40 CFR 133.105(d)):

- The BOD_5 and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of the effluent quality described above (Secondary Treatment Effluent Limits).
- A trickling filter or waste stabilization pond is used as the principal treatment process.
- The treatment works provide significant biological treatment of municipal wastewater (i.e., a minimum of 65% reduction of TSS is consistently attained.)

Based on monitoring data from 2004 to 2011, the 95th percentile value for the City of Homedale, average monthly limit for BOD_5 discharges was 64 mg/L; and for TSS discharges was 62 mg/L.

Percent removal rates are 97 percent for BOD_5 and 98 percent for TSS and 65 percent removal is consistently attained. Therefore, the City of Homedale cannot meet secondary treatment limits for BOD_5 and TSS, and the proposed permit continues to require Treatment Equivalent to Secondary for TSS. These values are a monthly average limit of 45 mg/L, a weekly average limit of 65 mg/L and a minimum monthly average removal of 65%.

Mass-based Limits

The federal regulations at 40 CFR §122.45(b) and (f) require that POTW limitations to be expressed as mass-based limits using the design flow of the facility. The mass-based limits, expressed in lbs/day, are calculated as follows based on the design flow:

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

The mass limits for BOD_5 and TSS are calculated as follows, using 0.45 mgd for design flow, the same value used to calculate load limits in the current permit:

Average Monthly Limit = 45 mg/L × 0.45 mgd × 8.34 = 169 lbs/day

Average Weekly Limit = 65 mg/L × 0.45 mgd × 8.34 = 244 lbs/day

Chlorine

Chlorine is often used to disinfect municipal wastewater prior to discharge. The Water Pollution Control Federation's *Chlorination of Wastewater* (1976) states that a properly designed and maintained wastewater treatment facility 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.

Finally, 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 are calculated as follows:

Monthly average limit = 0.5 mg/L x 0.45 mgd x 8.34 = 1.9 lbs/day

Weekly average limit = 0.75 mg/L x 0.45 mgd x 8.34 = 2.8 lbs/day

B. Water Quality-Based Effluent Limits

Statutory Basis for Water Quality-Based Limits

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an

NPDES permit that does not ensure compliance with the water quality standards of all affected States.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal water quality standard, including narrative criteria for water quality, and that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable water quality standards.

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

Reasonable Potential Analysis

When evaluating the effluent to determine if water quality-based effluent limits based on chemical specific numeric criteria are needed, a projection of the receiving water concentration downstream of where the effluent enters the receiving water for each pollutant of concern is made. The chemical-specific concentration of the effluent and receiving water and, if appropriate, the dilution available from the receiving water are factors used to project the receiving water concentration. If the projected concentration of the receiving water exceeds the numeric criterion for a limited parameter, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

The *Technical Support Document for Water Quality-Based Toxics Control* (EPA, 1991) (TSD) and the Idaho Water Quality Standards (WQS) recommend the flow conditions for use in calculating water quality-based effluent limits (WQBELs) using steady-state modeling. The TSD and the Idaho WQS state that WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (7Q10) for chronic criteria and the lowest one-day average flow rate expected to occur once every ten years (1Q10) for acute criteria.

Because the chronic criterion for ammonia is a 30-day average concentration not to be exceeded more than once every three years, EPA has used the 30B3 for the chronic ammonia criterion instead of the 7Q10. The 30B3 is a biologically-based flow rate designed to ensure an excursion frequency of no more than once every three years for a 30-day average flow rate. For human health criteria, the Idaho water quality standards recommend the 30Q5 flow rate for non-carcinogens, and the harmonic mean flow rate for carcinogens.

Sometimes it is appropriate to allow a small volume of receiving water to provide dilution of the effluent; these volumes are called mixing zones. Mixing zone allowances will increase the allowable mass loadings of the pollutant to the water body and decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the concentration of the pollutant of concern in the receiving water is below the numeric criterion necessary to protect the designated uses of the water body. Mixing zones must be authorized by the State. The IDEQ’s draft certification proposes to authorize a mixing zone of 25 percent of the

receiving water for the following parameters: ammonia and total residual chloride. This results in an acute dilution ratio of 1594 to 1, a chronic dilution ratio of 1677 to 1 and a chronic dilution ratio for ammonia of 1805 to 1.

Qe = maximum effluent flow = 0.45 mgd = 0.697 CFS

1Q10 = upstream low flow = 4440 CFS

$$\text{Acute dilution ratio} = \frac{0.697 + 4440(0.25)}{0.697} = 1594$$

7Q10 = upstream low flow = 4680 CFS

$$\text{Chronic dilution ratio} = \frac{0.697 + 4680(0.25)}{0.697} = 1677$$

For ammonia

30B3 = 5030 CFS

$$\text{Chronic dilution ratio} = \frac{0.697 + 5030(0.25)}{0.697} = 1805$$

If IDEQ does not grant the mixing zones in its final certification of this permit, the water quality-based effluent limits will be re-calculated such that the criteria are met before the effluent is discharged to the receiving water.

Procedures for Deriving Water Quality-based Effluent Limits

The first step in developing a water quality-based effluent limit is to develop a wasteload allocation (WLA) for the pollutant. A wasteload allocation is the concentration or loading of a pollutant that the permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water.

Wasteload allocations are determined in one of the following ways:

1. TMDL-Based Wasteload Allocation

   Where the receiving water quality does not meet water quality standards, the wasteload allocation is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point and natural background sources that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards.

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

The State of Idaho developed the *Mid Snake River/Succor Creek Subbasin Assessment and TMDL* (IDEQ) , April 2003 (TMDL). This TMDL reported that the Snake River from Swan Falls to Boise River, the segment including the Homedale WWTP discharge outfall, was impaired by temperature, nutrients and dissolved oxygen. The Subbasin Assessment established a TMDL for nutrients, and concluded that dissolved oxygen would be addressed by the nutrient TMDL. The TMDL proposed no action for flow alteration, and listed temperature as a concern. EPA approved this TMDL in January 2004. The TMDL resulted in the following Waste Load Allocation for the Homedale WWTP: Total Phosphorus - 5 kg/day.

2. Mixing zone based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone and the background concentrations of the pollutant.

3. Criterion as the Wasteload Allocation

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

C. Facility-Specific Water Quality-based Limits

Once the WLA has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the TSD to obtain daily maximum and monthly average permit limits. This approach takes into account effluent variability (using the CV), sampling frequency and the difference in time frames between the monthly average and daily maximum limits.

The daily maximum limit is based on the CV of the data and the probability basis, while the monthly average limit is dependent on these two variables and the monitoring frequency. As recommended in the TSD, the EPA used a probability basis of 95 percent for monthly average limit calculation and 99 percent for the daily maximum limit calculation.

Floating, Suspended or Submerged Matter/Oil and Grease

The Idaho Water Quality Standards (IDAPA 58.01.02.200.05) 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 uses. A narrative condition is proposed for the draft permit that states there must be no discharge of floating solids or visible foam or oil and grease other than trace amounts.

pH

The Idaho Water Quality Standards (IDAPA 58.01.02.250.01.a) require surface waters of the State to have a pH value within the range of 6.5 - 9.5 standard units. It is anticipated that mixing zones will not be authorized for the water quality-based criterion for pH. Therefore, this criterion

must be met when the effluent is discharged to the receiving water. The technology-based effluent limits for pH are 6.0 - 9.0 standard units. To ensure that both water quality-based requirements and technology-based requirements are met, the draft permit incorporates the more stringent lower limit of the water quality standards (6.5 standard units) and the more stringent upper limit of the technology-based limits (9.0 standard units).

Ammonia, Total (as Nitrogen)

The Idaho Water Quality Standards contain criteria for the protection of aquatic life from the toxic effects of ammonia (IDAPA 58.01.02.250.01.d.). The water quality standards apply the criteria for early life stages to water bodies (IDAPA 58.01.02.250.01.d.(3)). The criteria are dependent on pH and temperature, 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. Fresh water ammonia criteria are calculated according to the equations in Table B-3.

Table B-3 Water Quality Criteria for Ammonia

Acute Criterion	Chronic Criterion
$\frac{0.275}{1+10^{7.204-\mathrm{pH}}}+\frac{39}{1+10^{\mathrm{pH}-7.204}}$	$\left(\frac{0.0577}{1+10^{7.688-\mathrm{pH}}}+\frac{2.487}{1+10^{\mathrm{pH}-7.688}}\right)\times \mathrm{MIN}\left(2.85, 1.45\times 10^{0.028\times(25-T)}\right)$

The acute and chronic criteria are derived from the annual 95th percentiles of pH and temperature. The permittee reported effluent data for ammonia during the year 2006. The permittee reported surface water monitoring data for ammonia and total phosphorus on an approximately quarterly basis during 2008 to 2012. The existing permit required pH and temperature surface water monitoring but the permittee reported no surface water monitoring data for temperature and pH, parameters necessary to determine water quality criteria for ammonia. However, the Fruitland Snake River WWTP, which is about 50 miles downstream from Homedale on the Snake River, did report surface water monitoring data from August 2001 through December 2003. The 95th percentile values for each of pH and temperature from those surface water monitoring data will be used below to derive the ammonia criteria. Since the Fruitland Snake WWTP is downstream of the City of Homedale, this means that the reasonable potential determination will be conducted on a conservative basis (i.e., more protective of water quality standards) because it includes the City's discharges.

95th Percentile (from Fruitland Snake) Ambient pH	8.7
95th Percentile (from Fruitland Snake) Ambient Temperature °C	24.3
Highest Background Ammonia mg/L	0.18
Highest Discharge Ammonia mg/L	25.7
Coefficient of Variation (Homedale, 9 samples)	0.758

The ammonia acute standard is 1.47 mg/L and the chronic standard is 0.41 mg/L. The reasonable potential analysis shows the facility's discharge does not have the potential to cause or contribute to an exceedance of the acute or chronic criteria, therefore, no effluent limits for ammonia are required.

Escherichia coli (E. coli) Bacteria

The Snake River at the point of discharge is designated for primary contact recreation. 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 as a geometric mean based on a minimum of five samples taken every three to five days over a thirty day period (IDAPA 58.01.02.251.01.a). The proposed compliance monitoring schedule contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml and a minimum sampling frequency of five grab samples per calendar month.

The Idaho Water Quality Standards also state that for primary contact recreation a single water sample that exceeds 406 organisms/100 ml indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards (IDAPA § 58.01.02.251.01.b.ii).

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent (EPA, 1991). Because a single sample value exceeding 406 organisms/100 ml may indicate an exceedance of the geometric mean criterion, the EPA has included an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 406 organisms/100 ml, in addition to a monthly geometric mean limit of 126 organisms/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 the geometric mean criterion for *E. coli* and provide warning of and opportunity to avoid possible non-compliance with the geometric mean criterion.

Chlorine

Idaho water quality standards at IDAPA 58.01.02.210.01 establish a chlorine chronic aquatic life criterion of 11 μg/L and an acute aquatic life criterion 19 μg/L in the Snake River. The City of Homedale does not have a reasonable potential to violate the water quality standards for chlorine in the Snake. Therefore, water quality based effluent limits for chlorine are not required. However, the EPA will continue to include technology based limits of 0.5 mg/L average monthly and 0.75 mg/L average weekly derived for the proposed permit. The EPA will continue with the technology based monthly mass limit of 1.9 lbs/day and the weekly limit of 2.8 lbs/day.

Total Phosphorus

The WLA from the TMDL for phosphorus is 5 kg/day. The allocation is based on the operation at design capacity and monthly monitoring of total phosphorus. The TMDL states: “The target shown to result in attainment of water quality standards and support of designated uses in the reach is an instream concentration of less than or equal to 0.07 mg/L TP. Transport and deposition of phosphorus, and the resulting algal growth within the reach, is seasonal in nature. Therefore, application of the 0.07 mg/L TP target is also seasonal in nature, extending from the beginning of May through the end of September.” Therefore the effluent limit for total phosphorus will apply from May 1 through September 30.

Effluent limits in NPDES permits for POTWs that discharge continuously must be expressed as average monthly and average weekly limits (40 CFR 122.45(d)(2)).

Monthly average allocation = 5 kg/day = 11 lb/day

Weekly limit is derived by multiplying by 1.5

11 lbs/day x 1.5 = 16.5 lbs/day

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REASONABLE POTENTIAL FOR AQUATIC LIFE

		State Water Quality Standard		Max concentration at edge of...										
	Ambient Conc.	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	**LIMIT REQ'D?**	Effluent percentile value		Max effluent conc. measure	Coeff Variation	# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor
Parameter	*Mg/L*	*mg/L*	mg/L	*mg/L*	*mg/L*			*Pn*	*mg/L*	*CV*	*n*			
Ammonia	0.18	1.47	0.41	0.245	0.237	NO	0.99	0.599	25.7	0.758	9	2.56	1594	1805
Total Residual Chlorine	0.00	0.019	0.011	0.00066	0.00062	NO	0.99	0.973	0.700	1.328	84	1.03	1594	1677

Appendix C –IDEQ Draft 401 Certification