

Rulemaking Docket 58-0102-1703

Designation of Domestic Water Supply

Discussion Paper

Background

This rulemaking was initiated to designate domestic water supply as a beneficial use in water bodies where the Safe Drinking Water Information System indicated an active surface water intake and where domestic water supply is not currently designated.

DEQ held a negotiated rulemaking meeting on December 19, 2017, to discuss changes to Idaho Water Quality Standards proposed in the Preliminary Draft. Based on comments received, DEQ has revised draft rule language and is hosting a second negotiated rulemaking meeting.

Issue #1: Domestic Water Supply Use Definition

Idaho's Domestic Water Supply use designation is currently defined as follows:

Domestic (DWS): water quality appropriate for drinking water supplies (IDAPA 58.01.02.100.03.a).

This definition is somewhat ambiguous and may imply to some that waters designated for domestic water supply (DWS) must meet standards allowing for the safe, direct consumption of raw surface water without treatment. That is not the intent.

This definition carries further implications relative to when DWS would be considered an existing use requiring the application of the appropriate human health criteria. For example, does a single diversion for drinking water supply for a private home constitute an existing DWS use? Would the presence of a domestic water right suffice to establish an existing use? We would like to clarify this.

Idaho DEQ surveyed other states to identify how DWS is defined elsewhere. Of the 14 states that replied to the survey, 9 have statements in their use definition that surface waters protected for domestic or drinking water sources must be treated prior to use as a potable water supply (Table 1).

Idaho historically interprets the DWS use as intended for the protection of source water for public water systems that are regulated by the federal Safe Drinking Water Act and the State of Idaho. We would like to clarify that any raw surface water must be treated before it is safe for consumption and the changes to Subsection *100.03.a* proposed in Draft 2 are intended to clarify this interpretation:

100. Surface Water Use Designations

03. Water Supply

a. Domestic (DWS): water quality appropriate for use as untreated raw water (as defined under IDAPA 58.01.08 “Idaho Rules for Public Drinking Water Systems) for public drinking water supplies.

IDAPA 58.01.08.003.115 defines “raw water” as “any ground water, spring water, or surface water utilized as source water prior to treatment for the purpose of producing potable water.”

DEQ would like comments on the Draft 2 definition at Subsection 100.03.a clarifying these interpretations.

Table 1. Use definitions from 14 states that responded to domestic water use survey request.

State	Use Definition
NE	004.01 Public Drinking Water. These are surface waters which serve as a public drinking water supply. These waters must be treated (e.g., coagulation, sedimentation, filtration, chlorination) before the water is suitable for human consumption. After treatment, these waters are suitable for drinking water, food processing, and similar uses.
WA	Not defined; all but 6 waters designated
KY	"Domestic water supply" or "DWS" means surface waters that with conventional domestic water supply treatment are suitable for human consumption through a public water system as defined in 401 KAR 8:010, culinary purposes, or for use in a food or beverage processing industry; and meet state and federal regulations promulgated pursuant to the Safe Drinking Water Act, as amended, 42 U.S.C. 300f - 300j-26.
NV	Definition: Municipal or domestic supply. The water must be capable of being treated by conventional methods of water treatment in order to comply with Nevada's drinking water standards.
NH	"(f) Potential drinking water supply, meaning the surface water could be suitable for human intake and meet state and federal drinking water requirements after adequate treatment."
VT	(g) Public Water Sources. (1) Class A(2). (A) Management Objectives. Waters shall be managed to achieve and maintain a uniformly excellent character and a level of water quality highly suitable for use as a public water source with filtration and disinfection or other required treatment.
OK	There is not a specific definition. Water supply waterbodies are designated with the beneficial use Public and Private Water Supply. No, there is not an explicit expectation in the WQS that water be treated to be safely consumed. The water quality criteria which protect the Public and Private Water Supply beneficial use are applicable to the ambient waterbody (i.e. Raw water).
OR	In Oregon's designated beneficial use tables, there are footnotes for "Public Domestic Water Supply" and "Private Domestic Water Supply" that state, "With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards" So, yes, there is an explicit expectation for treatment prior to consumption.
MA	Answer: Under our Surface Water Quality Standards (SWQS) regulations (314 CMR 4.00) waters denoted as Class A, Public Water Supply (PWS) may be used as a source of public drinking water in accordance with the MA drinking Water Regulations, 310 CMR 22.00, which may be more stringent than 314 CMR 4.00 (from 314 CMR 4.06 (1)(d)1. Public Water Supply). There is also a qualifier ("Treated Water Supply") that can be applied to Class B surface waters "used as a source of water supply after appropriate treatment" (314 CMR 4.06(1)(d)6.). These waters may be subject to more stringent site-specific criteria established by the Department "as appropriate to protect and maintain the use. See also, 310 CMR 22.00." (314 CMR 4.06(1)(d)6.)

State	Use Definition
TX	<p>Public water supply. Segments designated for public water supply are those known to be used or exhibit characteristics that would allow them to be used as the supply source for public water systems as defined by Chapter 290 of this title (relating to Public Drinking Water).</p> <p>Sole-source surface drinking water supplies and their protection zones. Water bodies that are sole -source surface drinking water supplies are listed in Appendix B of §307.10 of this title. Sole-source surface drinking water supplies and their protection zones are addressed in Chapter 321 of this title (relating to Subchapter B: Concentrated Animal Feeding Operations).</p> <p>Aquifer protection. Segments designated for aquifer protection are capable of recharging the Edwards Aquifer. The principal purpose of this use designation is to protect the quality of water infiltrating into and recharging the aquifer. The designation for aquifer protection applies only to those portions of the segments so designated that are on the recharge zone, transition zone, or contributing zone as defined in Chapter 213 of this title (relating to the Edwards Aquifer). Chapter 213 of this title establishes provisions for activities in the watersheds of segments that are designated for aquifer protection.</p> <p>1b. Is there an explicit expectation the water first be treated to be safely consumed? TCEQ response: Not in 30 TAC §307, the Texas Surface Water Quality Standards. Public drinking water treatment requirements based on source type are outlined in 30 TAC §290.42.</p>
MN	<p>7050.0140 USE CLASSIFICATIONS FOR WATERS OF THE STATE.</p> <p>Subp. 2.Class 1 waters, domestic consumption. Domestic consumption includes all waters of the state that are or may be used as a source of supply for drinking, culinary or food processing use, or other domestic purposes and for which quality control is or may be necessary to protect the public health, safety, or welfare.</p>
ME	<p>Maine has classifications for our fresh surface waters, which all include the Drinking Water Use. For riverine Classes AA and A, 38 MRS (Maine Revised Statutes) Section 465 says “Class AA (A) waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection, ...”. The same language is used for the (sole) lakes Class GPA (38 MRS Section 465-A). For riverine Classes B and C, the statute says “Class B (C) waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; ...”. The term “treatment” (Classes B and C) refers to standard treatment under the SDWA, i.e. either 1) slow sand filtration or 2) coagulation and rapid sand filtration. In practice this means that if a contaminant cannot be treated to acceptable limits (MCL or MEG) with conventional technology, then it cannot be in fresh surface waters at or above that concentration.</p>
CO	<p>Colorado defines the water supply use classification as "surface waters are suitable or intended to become suitable for potable water supplies. These surface waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent) these waters will meet Colorado drinking water regulations (Colorado Water Quality Control Commission Regulation 31.13(d)."</p>

State	Use Definition
PA	Potable Water Supply—Used by the public as defined by the Federal Safe Drinking Water Act, 42 U.S.C.A. § 300F, or by other water users that require a permit from the Department under the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.18), or the act of June 24, 1939 (P. L. 842, No. 365) (32 P. S. §§ 631—641), after conventional treatment, for drinking, culinary and other domestic purposes, such as inclusion into foods, either directly or indirectly.

Issue #2: Identification of Waters for New Domestic Water Supply Use Designation

Idaho designates beneficial uses based on water body units (Subsection 110). Water body units are derived from hydrologic units and basins (Subsection 109). There are currently 2,641 water body units in Idaho, representing approximately 96,490 miles of rivers and streams.

Idaho currently has approximately 22,957 miles of rivers and streams designated for DWS, serving 46 Public Water Systems.

Systems with Surface Water Intakes

A search of the Safe Drinking Water Information System (SDWIS) database identified 26 additional water body units with active surface water intakes supplying public water systems (Table 2).

Table 2. Water Body Units not currently designated for DWS but with active public surface water intakes.

WQS Subsection	Hydrologic Unit Code	Water Body Unit	Water Body Unit Name
110.02	17010104	P-13	Myrtle Creek - source to mouth
110.02	17010104	P-28	Twentymile Creek - source to mouth
110.02	17010104	P-30	Cow Creek - source to mouth
110.03	17010105	P-3	Skin Creek - Idaho/Montana border to mouth
110.03	17010105	P-12	Meadow Creek - source to mouth
110.05	17010214	P-14	Cocolalla Creek - source to Cocolalla Lake
110.05	17010214	P-28	Riser Creek - source to mouth
110.05	17010214	P-29	Strong Creek - source to mouth
110.05	17010214	P-46	Berry Creek - source to mouth
110.05	17010214	P-48	Sand Creek - Schweitzer Creek to mouth
110.05	17010214	P-53	Little Sand Creek - source to mouth
110.09	17010302	P-9b	Lake Creek - mining impact area to mouth
110.09	17010302	P-10	Placer Creek - source to mouth
110.09	17010302	P-11	South Fork Coeur d'Alene River - from and including Daisy Gulch to Canyon Creek
110.09	17010302	P-14	Canyon Creek - from and including Gorge Gulch to mouth

WQS Subsection	Hydrologic Unit Code	Water Body Unit	Water Body Unit Name
110.11	17010304	P-67	Rochat Creek - source to mouth
120.07	17060305	C-56	Elk Creek - confluence of Big Elk and Little Elk Creeks to mouth
120.07	17060305	C-81	Sally Ann Creek - source to mouth
120.08	17060306	C-16	Big Canyon Creek - source to mouth
120.08	17060306	C-39	Orofino Creek - source to mouth
120.08	17060306	C-61	West Fork Little Bear Creek - source to mouth
140.10	17050112	SW-12	Elk Creek - source to mouth
140.12	17050114	SW-10	Fivemile Creek - source to Miller Canal
140.13	17050115	SW-4	Hurd Gulch - source to mouth
140.16	17050122	SW-4	Shafer Creek - source to mouth
140.17	17050123	SW-5	Horsethief Reservoir

GWUDI Systems

In addition to surface water systems, Idaho has several public water systems with sources of drinking water that are designated as ground water under the direct influence of surface water (GWUDI). While many of these systems are already located on water body units that are designated for DWS, a search of the SDWIS database identified 3 additional water body units with active public water systems designated as GWUDI (Table 3).

Table 3. Water Body Units not currently designated for DWS but with active GWUDI systems.

WQS Subsection	Hydrologic Unit Code	Water Body Unit	Water Body Unit Name
160.02	16010201	B-23	Soda Creek – Soda Creek Reservoir Dam to Alexander Reservoir
160.03	16010202	B-3	Cub River - from and including Sugar Creek to US HWY 91 Bridge (T16S, R40E, Sec. 20)
140.11	17050113	SW-27	Feather Creek - source to mouth

In total, DEQ is proposing to designate DWS for an additional 29 water body units, representing an additional 1,269 miles of rivers and streams serving 35 PWS. This would bring the total mileage of waters designated for DWS from approximately 22,957 to approximately 24,226 miles.

Designation of additional water body units with active surface water and GWUDI systems ensures that Idaho is adequately protecting waters where DWS is an existing use and clearly

articulating where DWS use and associated criteria apply, while not unnecessarily extending the designation to waters that are not intended to be used as sources for public water systems.

DEQ would like comments on this approach and any other approaches that may be suggested for identifying waters that should be designated for DWS.

Issue #3: Identification of Criteria Applicable to DWS Use

Subsection 252 of Idaho WQS is labelled *Surface Water Quality Criteria for Water Supply Use Designations*. Subsection 252.01 is intended to identify those criteria that apply to the DWS use.

However, the only criteria that are currently listed in 252 are for radioactive materials or radioactivity (252.01.a) or turbidity criteria for specific small public water supplies (252.01.b). DEQ intends to delete the radioactive materials and radioactivity criteria in 252.01.a as they are duplicative of criteria found in Subsection 200, and the criteria in 252.01.b (see Issue #4 discussion below). In addition, DEQ wants to clarify which human health criteria apply to waters designated for DWS.

Changes to Subsection 252.01.a proposed in Draft 2 of the negotiated rule are intended to clarify criteria that apply to waters designated for DWS:

252. Surface Water Quality Criteria for Water Supply Use Designation

01. Domestic. Waters designated for domestic water supplies are to exhibit the following characteristics:

a. Must meet general water quality criteria set forth in Section 200 and the Water & Fish criteria set forth in Subsection 210.01.b.

DEQ would like comments on the changes to subsection 252.01.a proposed in Draft 2.

Issue #4: Designated Small Public Water Supplies Table and Numeric Turbidity Criteria

Under current Water Quality Standards, Subsection 252.01.b identifies specific public water supply systems in a table of Designated Small Public Water Supplies, and applies specific numeric turbidity criteria at the intakes of the listed systems. The current structure of the standards at 252.01.b is problematic and should be revised. Some of these problems are as follows:

Table Interpreted as Waters Designated for DWS

Readers interpreting WQS may mistake the table in Subsection 252 for the actual use designations, and therefore not appropriately apply criteria to all waters designated for DWS. Since the table at 252.01.b.i is very limited, this could result in under application of criteria for assessments, TMDLs, permitting, and certification activities.

Table Requires Frequent Rulemaking Updates

The table at 252.01.b.i is a static representation of dynamic public water systems. Since this table is incorporated as a water quality standard, revision to the table requires DEQ initiate formal rulemaking to update. Rulemaking requires interaction with the DEQ Board, legislative approval, and submission and approval by EPA before the changes are applicable. Consequently the table is rarely accurate.

Turbidity Criteria Only Apply to Intakes Specified in Table

The turbidity criteria at 252.01.b.ii only apply to those systems specified in the table of designated small public water systems identified in 252.01.b.i; thus the criteria are not applied to the DWS use in other waters.

This has the following implications:

- The criteria are only applicable to those systems specified in 252.01.b.i; the numeric turbidity criteria do not apply to any public water systems not listed in 252.01.b.i.
- Because the criteria are not applied to the DWS use, there is not an appropriate vehicle for applying the numeric turbidity criteria where DWS is either designated in rule or known to be an existing use.
- Applying the criteria to any system (new or existing) not listed in the table at 252.01.b.i would require rulemaking to revise the WQS and EPA approval prior to applying the criteria in any CWA activity (e.g., permitting, certifications, assessments, etc.).

The Preliminary Draft of the proposed rule recommended striking 252.01.b in its entirety, and using narrative turbidity criteria in Subsection 200 to protect public water system intakes from excess turbidity.

Based on comments received to the Preliminary Draft, Subsection 252.01.b has been revised in Draft 2 in order to more explicitly communicate the turbidity requirements for protection of public water systems and to retain the numeric turbidity criteria:

01. Domestic. Waters designated for domestic water supplies are to exhibit the following characteristics:

b. Turbidity as measured at any public water intake shall not be:

- i. Increased by more than five (5) NTU above ~~natural~~ background, measured at a location upstream from or not influenced by any human*

induced nonpoint source activity, when background turbidity is fifty (50) NTU or less.

- ii. Increased by more than ten percent (10%) above ~~natural~~ background, measured at a location upstream from or not influenced by any human induced nonpoint source activity, when background turbidity is greater than fifty (50) NTU.*

DEQ would like comments on the changes to Subsection 252.01.b proposed in Draft 2.

Summary

DEQ has scheduled a second negotiated rulemaking meeting for April 24, 2018, to discuss the issues identified in this discussion paper and proposed changes in Draft 2 of the Proposed Rule, as well as any other topics brought forward by interested stakeholder.