UTAH DEPARTMENT of ENVIRONMENTAL QUALITY
WATER QUALITY

Water Quality Standards Revisions Supporting Documentation
Proposed Amendments to R317-2, Standards of Quality for Waters of the State Published in the April 2, 2018 Utah Bulletin

Note: This document is intended as a companion document to the information published in the April 2, 2018 Utah Bulletin. The information in the Utah Bulletin prevails should any unintentional discrepancies occur between this document and the Utah Bulletin.

Comments will be accepted until 5:00 p.m., May 1, 2018. Comments should be mailed to Christopher Bittner, Utah Division of Water Quality, P.O. Box 144870, SLC, Utah 84114-4870, faxed to (801) 536-4301 or e-mailed to cbittner@utah.gov. Comments will also be accepted at the public hearings. Public hearings will be preceded by 30 minutes for additional information and general questions. The public hearings to receive comments will be held for a minimum of 60 minutes at the following times and locations:

PUBLIC HEARING DATE	TIME	LOCATION
Wednesday, April 11, 2018	6:00 PM	Utah Department of Environmental Quality Multi-State Agency Office Building, DEQ Board Room 195 N. 1950 W Salt Lake City, UT 84116
Friday, April 13, 2018	5:00 PM	Uintah County Library Meeting Room 204 East 100 North Vernal, Utah 84078
Monday, April 16, 2018	6:00 PM	Grand County Library Meeting Room 257 E. Center St. Moab, UT 84532
Tuesday, April 17, 2018	6:00 PM	Washington County Library Community Room 88 West 100 South St. George, UT 84770

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Summary

1. a. In R317-2-3.5.d., the proposed change is to delete the requirement that an Antidegradation Level II Review is always required for Class 1c drinking water use waters. The Level II review has

two critical steps. The first is that the use of assimilative capacity when effluent concentrations exceed ambient concentrations is socially and economically important. The second is that the least degrading, feasible treatment alternative is being used.

This change was endorsed by Reed Obendorfer who at the time represented the Central Utah Project on the water quality standards workgroup. The Division of Drinking Water was notified of the proposed change as were every surface water drinking water provider in the State in 2015 (see letter in Attachment 1.a.). No comments objecting to the change were received.

b. In R317-2-3.5.e. Antidegradation Policy Public Notice, a requirement to public notice and comment revisions to the Antidegradation Implementation Guidance were added to ensure consistency with federal requirements. More details are provided in Attachment 1.b.

Prior to substantive revisions to Utah's antidegradation review requirements in circa 2009, most discharges were not required to perform a Level II antidegradation reviews. At the request of drinking water providers, DWQ agreed that all discharges should be subject to a Level II antidegradation review. Utah's current antidegradation policy requires a level II antidegradation review for all new discharge permits and whenever concentrations or loading increase from previously permitted values. These changes preclude the need for a special requirement for discharges to Class 1C drinking water use waters. However, the rule requirement still required that a Level II antidegradation review be conducted at each permit renewal even when a review has already been completed and the renewed permit had no increases. These reviews are perfunctory and unnecessarily burdensome because no new information was available.

2. In R317-2-11 Public Participation, Revisions are proposed that will result in longer public notice and comment periods than currently required. These changes clarify the public participation to be consistent with both federal requirements and Utah statutory requirements. More details are provided in Attachment 2.

3. a. In R317-2-13 Classifications of Waters of the State, specific descriptions for waters with site-specific criteria were added and the footnote added to the affected use. Formatting changes were made to align the columns, indentations, and the order in which waters appear. No changes to the actual uses or criteria were made. In the existing rules, these criteria are listed in Footnote 4 for Table 2.14.1 and in Table 2.14.2. These criteria and the descriptions of the specific waters are unchanged. These revisions are nonsubstantive because they are informational only.

   b. In R317-13.5.c, Classifications of Waters of the State, revised use classes are recommended for Grove and Battle Creeks in Utah County. The City of Pleasant Grove uses these creeks as a potable water source and requested that Class 1C domestic water use be added. These are antidegradation Category 1 waters and no new discharges are allowed (R317-2-3.2). These creeks are currently classified by default as Classes 2B and 3D. Based on the observed water temperatures and aquatic macroinvertebrates present, Class 3A, cold water aquatic life is recommended instead

of the existing Class 3D waterfowl, shorebirds and other water-oriented wildlife. The Class 3A has equal or more stringent criteria and therefore does not require a Use Attainability Analysis.

The following use classes are recommended for Battle and Grove Creeks:

Class 1C - Protected for use as a raw water source for domestic water systems.

Class 2B (no change)- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain. Delete Class 3D, Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

More details are provided in Attachment 3.b.

c. Mill Creek in Grand County. In R317-13.1, the proposed change is from Class 2B, infrequent primary and secondary contact recreation to Class 2A, frequent primary and secondary contact recreation. As specified in R317-2-6.2.a, specific examples of frequent primary contact include swimming. Letters of support and pictures of swimmers were received from the Moab Watershed Council and Bureau of Land Management supporting the proposed change. Mill Creek is the location of a popular swimming hole in the summer. More details are provided in Attachment 3.c.

d. Utah Lake, Utah County. In R317-2-13.12.x. The proposed change is from Class 2B, infrequent primary and secondary contact recreation to Class 2A, frequent primary and secondary contact recreation. As specified in R317-2-6.2.a, specific examples of frequent primary contact include swimming and water skiing. Utah Lake has public swim beaches (e.g., Lincoln Beach, Sandy Beach Access) and several marinas for access to waterskiing and wakeboarding (e.g., American Fork Boat Harbor, Lincoln Harbor, Utah Lake State Park).

This change is anticipated to have little effect on Utah Lake because frequent primary and secondary contact recreation are “existing uses.” Utah’s water quality standards require that existing uses be protected (r317-2-3.5) . "Existing Uses" means those uses actually attained in a water body on or after November 28, 1975, whether or not they are included in the water quality standards (R317-1-1-1). More detail is provided in the Detailed Explanation of Revisions below.

4. a. In R317-2-14 Numeric Criteria, Table 2.14.6, the majority of the human health criteria are updated based on the most recent scientific data. The human health criteria are intended to be

protective when the water is used as potable water source and aquatic life are potentially consumed by humans. The criteria for pollutants with United States Environmental Protection Agency (USEPA) drinking water Maximum Contaminant Levels but no current USEPA human health criteria were moved from Table 2.14.6 to the Class 1C use in Table 2.14.1. Moving the pollutants to Table 2.1.4.1 does not affect the classification of any Class 1C water or applicable numeric criteria. More details are provided in Attachment 4.a.

b. In Table 2.14.1., the fluoride criteria for the Class 1C drinking water use waters are 1.4-2.4 mg/L depending on the air temperature (Footnote 3 to Table 2.14.1). The current USEPA finished drinking water maximum contaminant level (MCL) is 4.0 mg/L and the maximum contaminant level goal (MCLG) is 4.0 mg/L. The proposed change is to update to the current MCL of 4.0 mg/L. This change would apply to all Class 1C waters in Utah. All of the drinking water providers and the Division of Drinking Water were notified of the proposed changed in 2015 (see Attachment 4.b.). No comments were received by DWQ.

c. In Table 2.14.1, Footnote (4) Site-Specific Standards for Total Dissolved Solids (TDS). The proposed change is to add "and tributaries" to the site-specific TDS criteria for Quitchupah Creek from the confluence with Ivie Creek to Highway U-10, Emery County. The "and tributaries" was inadvertently omitted when the site-specific criteria were promulgated. This resulted in the statewide TDS criterion of 1,200 mg/L being applicable for the tributaries resulting in an impairment of Quitchupah Creek in 2016. The rationale used to support the site-specific criteria for Quitchupah Creek applies equally to the tributaries. The site-specific criteria are 3,800 mg/L and a total sulfate of 2,000 mg/L to protect the existing livestock watering agricultural use. More details are provided in Attachment 4.c.

d. In Table 2.14.1, Footnote (4) Site-Specific Standards for Total Dissolved Solids (TDS). The proposed change is to correct the reference:

Sevier River from Gunnison Bend Reservoir to Clear Lake: 3,370 mg/l
to:
Sevier River from Gunnison Bend Reservoir to Crafts Lake: 3,370 mg/l

The reference to Clear Lake is incorrect because it's not on the Sevier River.

e. Corrections were made to the table values for the chronic ammonia criteria, fish early life stages absent table for Table 2.14. 2 and the acute silver criteria in Table 2.14.2.

f. In Table 2.14.2, the proposed change is to update Utah's water quality criteria for cadmium for the protection of aquatic life to be consistent with the USEPA criteria updated in 2016. The updates would apply to all Classes 3A through 3D waters in Utah. The cadmium criteria are expressed as equations that include pH and hardness. The table below compares Utah's existing

cadmium criteria to the 2016 USEPA criteria at 100 mg/L $CaCO_3$ hardness. The conversion factors from dissolved (criterion) to total recoverable (UDPES permits) are unchanged.

Cadmium	Acute (µg/L)	Chronic (µg /L)
Utah	2.0	0.25
USEPA 2015	1.8	0.72

As shown in the table above, the proposed acute criterion is marginally more stringent and the chronic criterion is almost 3-times less stringent. These changes are anticipated to have little effect on Utah's water quality programs. No discharge permits with cadmium water quality-based effluent limits were identified. Some Utah waters are currently impaired for cadmium and these include segments of the San Juan River, Little Cottonwood, Big Cottonwood City and Parley's Creeks in Salt Lake County, Spring Creek in Utah County and McHenry and Silver Creeks in Summit County. The potential effects of the proposed cadmium criteria on these impairments are unknown.

g. In Table 2.14.2, the proposed change is to add new aquatic life criteria for carbaryl to Classes 3A through 3D. The USEPA published new criteria for carbaryl in 2012. The U.S. Geological Service reports that carbaryl is the 2nd most commonly detected pesticide in urban streams. Carbaryl is used in agriculture to control pests on terrestrial food crops including fruit and nut trees, many types of fruit and vegetables, and grain crops; cut flowers; nursery and ornamentals; turf, including production facilities; greenhouses; and golf courses. Carbaryl is also registered for use on residential sites (e.g., annuals, perennials, shrubs) by professional pest control operators and by homeowners on gardens, ornamentals and turfgrass. Carbaryl can enter the water via runoff.

No specific data regarding the use of carbaryl in Utah were available from DWQ's pesticide permitting program or the Utah Department of Agriculture and Food. Carbaryl is not a regular target analyte for DWQ's monitoring programs. Carbaryl is not expected to be a common pollutant in permitted discharges.

The proposed carbaryl aquatic life criteria are:

Acute (1 hour) (µg /L)	Chronic (4 days) (µg/L)
2.1	2.1

h. Informational footnotes, (1) to Table 2.14.1 and (8) to Table 2.14.2, were added to alert the reader that additional criteria are applicable to the Class 1C and Class 3 uses.

ATTACHMENT 1.a.

R317-2-3.5.d.

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
Director

FILE COPY

March 23, 2015

DAN MATTHEWS
JORDANELLE SSD
PO BOX 519
HEBER CITY, UT 84032

Document Date 3/23/2015
DWQ-2015-004306

Dear Water Provider:

Subject: Proposed Changes to Surface Water Standards that affect the Class 1C Drinking Water Use

I am writing to inform you about two proposed changes to Utah's water quality standards that affect the Class 1C drinking water use. Waters that are designated as Class 1C are protected for domestic purposes with prior treatment processes approved by the Utah Division of Drinking Water.

Prior to proposing these changes to the Utah Water Quality Board, I am seeking feedback from you, the water providers. Ultimately, if changes to the standards occur, the changes will be made in accordance with the required rulemaking procedures. These procedures include initial permission from the Utah Water Quality Board to initiate rulemaking, public notice and comment, and finally, formal adoption of the changes by the Water Quality Board.

The first proposed change is to the fluoride criterion. The existing fluoride criterion ranges from 1.4-2.4 mg/l depending on the maximum air temperature (UAC R317-2-14, Table 2.14.1). This range is based on the assumption that the higher the air temperature, the more water people will drink. The more water that people drink, the lower the criterion is to provide equivalent protection from the adverse effects of fluoride. However, the current USEPA maximum contaminant level (MCL) and maximum contaminant level goal (MCLG) for fluoride in finished culinary water is 4.0 mg/l and a temperature correction is no longer recommended. The proposed change is to revise the fluoride criterion for Class 1C waters to 4.0 mg/l with no temperature correction.

The second proposed change is to the procedures for conducting antidegradation reviews (UAC R317-2-3). Antidegradation is a complicated topic. In summary, degradation occurs when the concentration of a pollutant in a discharge is higher than the background concentration in the receiving water. When degradation is permitted, the antidegradation review is intended to ensure that the least degrading, feasible treatment option is used. The existing requirements for conducting antidegradation reviews include special procedures for Class 1C waters (UAC R317-2-3.5.d.):

> An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned.
>
> Depending upon the locations of the discharge and its proximity to downstream drinking water diversions, additional treatment or more stringent effluent limits or additional monitoring, beyond that which may otherwise be required to meet minimum technology standards or in stream water quality

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standards, may be required by the Director in order to adequately protect public health and the environment. Such additional treatment may include additional disinfection, suspended solids removal to make the disinfection process more effective, removal of any specific contaminants for which drinking water maximum contaminant levels (MCLs) exists, and/or nutrient removal to reduce the organic content of raw water used as a source for domestic water systems.

Additional monitoring may include analyses for viruses, Giardia, Cryptosporidium, other pathogenic organisms, and/or any contaminant for which drinking water MCLs exist. Depending on the results of such monitoring, more stringent treatment may then be required.

The additional treatment/effluent limits/monitoring which may be required will be determined by the Director after consultation with the Division of Drinking Water and the downstream drinking water users.

The proposed change is deletion of the requirement that "An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned." All of the remaining special procedures will be retained. At the time that this provision was added to the antidegradation review requirements, the requirements included several exceptions or "off ramps." The vast majority of discharge permits were issued based on these exceptions and antidegradation reviews were not required. At the explicit request of some of Utah's water providers, the requirement was added to conduct an antidegradation review and ensure the least degrading, feasible, treatment option for all discharges to Class 1C waters.

In 2010, the antidegradation review requirements were revised in response to court decisions in other states. One of these changes was to eliminate the previous exceptions to when an antidegradation review was required. Under the current requirements, an antidegradation review is required for all new discharges and for any increases in concentration or loading for existing discharges. Therefore, antidegradation reviews are required for all new or increased discharges to Class 1C waters. However, because of the requirement that "An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned," dischargers to Class 1C waters are still required to do an antidegradation review every time a discharge permit is renewed (every 5 years) even when the concentrations or volume of the discharge has not changed. These antidegradation reviews are perfunctory because they simply reiterate the previous antidegradation review and constitute an unnecessary regulatory burden.

Like you, the Division of Water Quality is committed to providing the highest level of protection to our drinking water source waters and these proposed changes do not decrease the existing protections for Class 1C waters. If you have any questions or concerns regarding these proposed changes, please contact Mr. Chris Bittner who is the Standards Coordinator (801-536-4371 or cbittner@utah.gov) by April 17, 2015. After this date, the revisions may be proposed to the Utah Water Quality Board.

Sincerely,

Walter L. Baker, P.E.
Director

WLB:cb:mc

cc: Ken Bousfield, Utah Division of Drinking Water

DWQ-2015-004066

ATTACHMENT 1.b.

R317-2-3.5.e. Antidegradation Review Public Notice

A requirement that provides an opportunity for public comment whenever substantial changes are made to the Antidegradation Implementation Guidance referenced in R317-2-3.5.f is proposed. Utah's existing practice for revisions is to initially work with the Water Quality Standards Workgroup, solicit public comments and inform the Water Quality Board. Adding a public comment requirement in rule ensures that future modifications to the Implementation Guidance will be done consistent with the updated USEPA requirements in 40 CFR § 131.12(b), which states that "The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods." The proposed revisions follow.

e. Public Notice

The public will be provided notice and an opportunity to comment on the conclusions of all completed antidegradation reviews. When possible, public notice on the antidegradation review conclusions will be combined with the public notice on the proposed permitting or certifying action. In the case of UPDES permits, public notice will be provided through the normal permitting process, as all draft permits are public noticed for 30 days, and public comment solicited, before being issued as a final permit. The Statement of Basis for the draft UPDES permit will contain information on how the ADR was addressed including results of the Level I and Level II reviews. In the case of Section 404 permits from the Corps of Engineers, the Division of Water Quality will develop any needed 401 Certifications and the public notice may be published in conjunction with the US Corps of Engineers public notice procedures. Other permits requiring a Level II review will receive a separate public notice according to the normal State public notice procedures. The public will be provided notice and an opportunity to comment whenever substantive changes are made to the implementation procedures referenced in R317-2-3.5.f.

ATTACHMENT 2

R317-2-11 Public Participation

In addition to the requirements of Utah's administrative procedures, Utah has specific notice requirements in Title 19 Chapter 5 Section 110 for water quality standards. Applicable federal regulations are found in 40 CFR § 131.20 and 40 CFR Part 25. To be consistent with the federal requirement of at least 45 days' notice before a public hearing, the rule is proposed to be revised to require at least 45-days notice prior to the public hearing. The notice period will begin when the notice is available on State websites. The rule was also revised to explicitly include the key Utah statutory requirements. Past and ongoing revisions to the standards comply with these requirements and the revisions are intended to provide transparency and ensure future consistency.

Proposed rule language:

R317-2-11. Public Participation.

Public notices and public hearings will be held for the consideration, adoption, or amendment of the classifications of waters and standards of purity and quality. Public notices shall be published at least twice in a newspaper of general circulation in the area affected at least 30 days prior to any public hearing. The notice will be posted on a State public notice website at least 45 days before any hearing and a notice will be mailed at least 30 days before any hearing to the chief executive of each political subdivision and other potentially affected persons.~~Public hearings will be held to review all proposed revisions of water quality standards, designations and classifications, and public meetings may be held for consideration of discharge requirements set to protect water uses under assigned classifications.~~

ATTACHMENT 3.b.

R317-2-13.5.a.c., Grove and Battle Creeks, Utah County

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

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Alan Matheson
Dr. James VanDerslice
Dr. Erica Brown Gaddis
Executive Secretary

MEMORANDUM

TO: Water Quality Standards Workgroup

FROM: Chris Bittner, Chair

DATE: October 16, 2017

SUBJECT: Proposed recreational and aquatic life uses to complete the designation of uses for Grove and Battle Creeks, Utah County, Utah

As previously discussed with the workgroup at the October, 2016 meeting, the Division of Water Quality (DWQ) is proposing to add the Class 1C use to Grove and Battle Creeks. At that time, site-specific information to recommend changes to the existing recreational and aquatic life uses was unavailable. These creeks are currently classified by default as Classes 2B and 3D and these reaches are antidegradation Category 1 waters (no new discharges allowed). Based on the expected low flows and shallow nature of the creeks, the Class 2B, infrequent primary and secondary contact recreation was expected to be appropriate. For aquatic life, Class 3A, cold water aquatic life was expected to be appropriate based on similarities with other creeks located on similar aspects, land uses and elevations. The Utah Division of Wildlife Resources manages these waters as a cutthroat trout fishery but has no site-specific information regarding the actual occurrence of trout.

On August 22, 2017, DWQ staff conducted a reconnaissance of these two creeks (Figure 1). The purpose of this reconnaissance was to confirm that Class 2B, infrequent primary and secondary contact recreation and Class 3A, cold water aquatic life are appropriate. In addition to visual observations, water chemistry was measured, portions of the creeks were shocked for fish and qualitative macroinvertebrate samples were collected. The reconnaissance survey was not intended to definitively characterize either the recreational or aquatic life uses.

The reconnaissance began at the base of Mount Timpanogos at the Battle Creek trailhead where the water is diverted for drinking water. The surveyors hiked approximately 2 ½ miles up the Battle Creek trail and then traversed north to the Grove Creek trail before hiking down to the Grove Creek trailhead (Figure 2). The creeks were accessed at favorable locations.

Both creeks are high-gradient and include several waterfalls and cascades (Figures 3-8). These high energy conditions result in unstable or scoured substrates. In much of Grove Creek, the substrate rocks are embedded because of a precipitate. Both creeks have a lack of connectivity

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with downstream waters because of dewatering and the waterfalls would likely impede fish migrations.

For the water chemistry measurements, the Hydrolab malfunctioned in the field and only temperature could be measured. The measured temperatures were 9°C in Battle Creek and ranged from 10° to 15° C in Grove Creek. Laboratory data was previously submitted by Pleasant Grove in support of their request.

The most favorable fish habitats in Battle Creek were shocked and no fish were observed. Battle Creek was previously shocked near the trailhead 2015 and no fish were observed. At several locations any stunned fish would have been difficult to see due to the fast and turbulent flow. No likely fish refuges were observed in Grove Creek, so it was not shocked.

Qualitative macroinvertebrate samples were collected from both creeks using a kick-net. Macroinvertebrates were sparse and dominated by mayflies, caddisflies, and stoneflies. In Grove Creek, small leaches (~10 mm) were also observed. The macroinvertebrates were all generally small (~5 mm).

Recommendations. The existing recreational use of Class 2B is appropriate because the shallow water depth and a lack of pools will not support frequent primary and secondary contact recreation.

The expectation that these creeks should be Class 3A, cold water aquatic life is confirmed by the macroinvertebrates observed and supported by the water temperatures measured. Class 3A also includes fish such as trout and although the current indications are that fish are not residents for the purposes of determining appropriate criteria, more rigorous surveys are needed to conclude that fish are not residents.

Redline of R317-2

TABLE

Dry Creek and tributaries (above Alpine), from U.S. National Forest boundary to headwaters	2B 3A	4
American Fork Creek and tributaries, from diversion at mouth of American Fork Canyon to headwaters	2B 3A	4
Spring Creek and tributaries, from Utah Lake near Lehi to headwaters	2B 3A	4
Lindon Hollow Creek and		

ATTACHMENT 3.b.

tributaries, from Utah Lake to headwaters		2B	3B	4
Grove Creek from Murdock Diversion to headwaters	1C	2B	3A	
Battle Creek from Murdock Diversion to Headwaters	1C	2B	3A	
Rock Canyon Creek and tributaries (East of Provo) from U.S. National Forest boundary to headwaters	1C	2B	3A	4

Figure 1. Battle and Grove Creeks, Utah County, Utah

Figure 2. Battle and Grove Creeks Site Reconnaissance

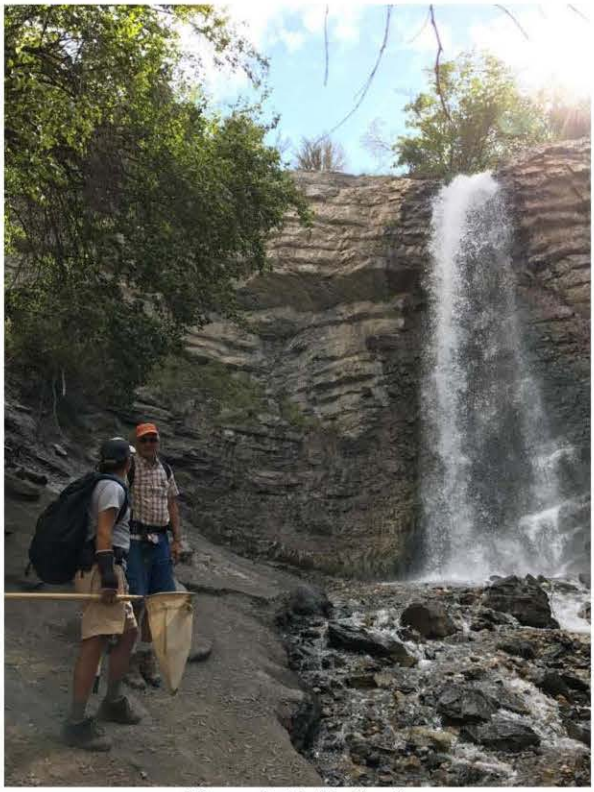

Figure 3. Battle Creek

Figure 4. Battle Creek

Figure 5. Battle Creek

Figure 6. Grove Creek

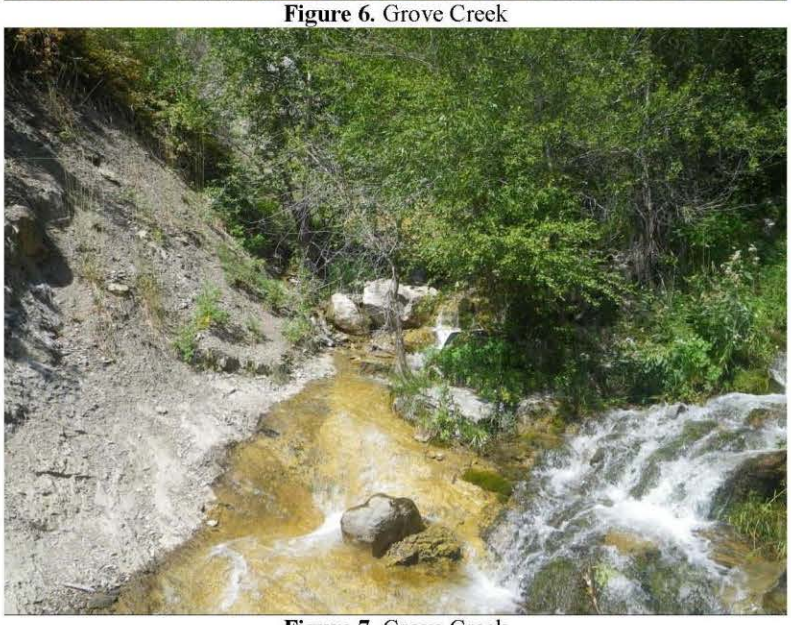

Figure 7. Grove Creek

Figure 8. Grove Creek

ATTACHMENT 3.b.

State of Utah
GARY R. HERBERT
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Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

May 31, 2016

Richard Bay
Jordan Valley WCD
8215 South 1300 West
West Jordan, Utah 84088

Dear Mr. Bay:

Subject: **Plan Approval and Operating Permit**, Battle Creek Intake (WS002D) and Grove Creek Intake (WS002E) System #18027, File #10320

The Division of Drinking Water (the Division) met with representatives from Pleasant Grove City, Provo River Water Users Association (PRWUA), Metropolitan Water District of Salt Lake and Sandy (MWDSLS), Jordan Valley Water Conservancy District (JVWCD), and John Schiess of Horrocks Engineers on February 4, 2016, to discuss Battle Creek and Grove Creek surface water diversions. As-built drawings and preliminary source chemistry were received at that time. Additional water chemistry data was received April 27, 2016.

It is our understanding that historically the overflow drainage from Battle Creek and Grove Creek was captured in the Murdock Canal. When this canal was covered, piping was added to allow for the overflow to continue entering the Murdock Canal (also known as the Provo River Aqueduct). The Murdock Canal/ Provo River Aqueduct can be used as a raw water source for both Metropolitan Water District's treatment plant and for Joran Valley Water Conservancy's treatment plant. However, the intake structures and piping for these sources is owned and maintained by Pleasant Grove City.

The Battle Creek Intake has been added to all three water systems and is identified as follows:

Pleasant Grove City (System #25022) —Battle Creek Intake (WS0018)
Metropolitan Water District (System #18016) —Battle Creek Intake to the PRA (WS003C)
Jordan Valley WCD (System #18027) — Battle Creek Intake (WS002D)

The Grove Creek Intake has been added to all three water systems and is identified as follows:

Pleasant Grove City (System #25022) — Grove Creek Intake (WS0019)
Metropolitan Water District (System #18016) — Grove Creek Intake to the PRA (WS003D)
Jordan Valley WCD (System #18027) — Grove Creek Intake (WS002E)

The subject intakes are listed as active sources in your water system. We have received the following information for Battle Creek and Grove Creek Intakes:

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1. Documentation of valid water right(s).
2. Location data on the diversion structures.
3. New source chemical analyses.
4. Source Protection Plan
5. Record Drawings

We have determined that the submittal for Battle Creek and Grove Creek basically comply with the applicable portions of Utah's Administrative Rules for Public Drinking Water Systems in R309 and that conditions of issuing an Operating Permit have been accomplished. On this basis, **Plan Approval and an Operating Permit for Battle Creek (WS002D) and Grove Creek (WS002E) Intakes is hereby issued as constituted by this letter.**

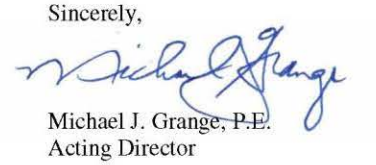
Please maintain a copy of this letter with your permanent records for future reference.

Monitoring and Reporting Requirement

Enclosed please find a copy of this water system's master report, which includes the inventory report showing the facilities currently listed in our database for your system and the monitoring schedule. Please note that the addition of the Battle Creek Intake and the Grove Creek Intake have been included in the RW002, Combined Raw Water to TP002 Group. Your monitoring requirements have not changed. Please contact Emily Frary at (801) 536-0070 or emilyfrary@utah.gov for questions related to monitoring and reporting requirements.

If you have any questions, please contact Tammy North, of this office, at (801) 536-4293, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,



Michael J. Grange, P.E.
Acting Director

TN/yym/mdb/hb

Enclosure – Water System Master Report

cc: Royal DeLegge, Salt Lake County Environmental Health Director, rdlegge@slco.org
Gregory H Woodcox, Pleasant Grove City, gwoodcox@pgcity.org
Steve Cain, PRWUA, shc@prwua.org
Shazelle Terry, JVWCD, shazellet@jvwcd.org
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DDW-2016-010593

ATTACHMENT 3.b.

Utah Department Of Environmental Quality
Division Of Drinking Water

JORDAN VALLEY WCD | **PWS ID: UTAH18027** | **Rating: Approved** | **06/01/1980** | **Active**

Legal Contact

JORDAN VALLEY WCD
RICHARD BAY
8215 SOUTH 1300 WEST
WEST JORDAN, UT 84088
Phone: 801-565-4300
County: SALT LAKE COUNTY
System Type: Community
Population: 82,500

Site Updates

Last Inventory Update: 05/09/2016
Last Surveyor Update: 06/15/2014
Surveyor: DAVID F HANSEN
Operating Period: 1/1 - 12/31
Last IPS Update: 05/25/2016 07:00:00

Consumptive Use Zone

Irrigation Zone: 4
Date: 02/15/2013

Admin Contacts

Name	Title	Office	Emergency	Email
BAY, RICHARD		801-565-4300		richardb@jvwcd.org

Inventory Report

Service Connections

Type	Meter Type	Meter Size	# Of Connections
Residential	Metered	0	7672
Combined	Unknown	0	227
Commercial	Unknown	0	1149
			Total Service Connections: 9048

Treatment Plants

ID	Plant Name	Bin	Status	Date	Design Cap	Status
TP001	SWGWTP	4	Determined	04/23/2013		Active
Treatment Purposes						
TDS/SULFATE/TUR						
TP002	JVWTP	1	Determined	03/31/2009	180 MGD	Active
Treatment Purposes						
BWASH LAGOONS, CARBON, CLEARWELL, DECANT RECYCLE, FILTERS, FLOCCULATION, FLOWMETER, FLUORIDATION, INLET CHANNEL, LAGOON DRYING, POLY FLOCCULATE, POLY-ALUM COAG, POND DRYING, POST-CL2 GAS, PRE-CL2 GAS, PRE-FILTER POLY, RAPID MIX, SEDIMENTATION, SLUDGE PONDS, SOLIDS HAULING						
TP003	WILLOW CREEK CHLORINATOR	0				Active
Treatment Purposes						
DISINFECTION						
TP019	1300 E 7000 S - FLUORIDATOR	0				Active
Treatment Purposes						
FLUORIDATION						
TP023	SERWTP	1	Determined	03/31/2009		Active
Treatment Purposes						
ACH COAGULATE, BACKWASH BASIN, CARBON, CLEARWELL, CONTACT BASIN, CONTACT HOCL, DECANT RECYCLE, FILTERS, FLOCCULATION, FLOWMETER, FLUORIDATION, POLY FLOCCULATE, POST-HOCL, PRE-FILT ACH, PRE-FILT CARBON, PRE-FILT HOCL, PRE-FILT POLY, PRE-HOCL, PRE-SCREENING, PRE-SETTLING, PRE-TREAT HOCL, RAPID MIX, SAND FLOCCULATE, SEDIMENTATION, SLUDGE DRYING, SLUDGE MUCKING, SOLIDS BASIN, SOLIDS TRUCKING						

TP028	SOLENA WAY - FLUORIDATOR	0	Active
Treatment Purposes			
FLUORIDATOR			
TP029	1330 E 8200 S -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP030	ALBION WELL CHLORINATOR	0	Active
Treatment Purposes			
DISINFECTION			
TP031	NEWBURY DR - CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP032	1100 E 4500 S -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP033	SIESTA DR - CHLORINATOR	0	Active
Treatment Purposes			
DISINFECTION			
TP034	900 E 8500 S - CHLORINATOR	0	Active
Treatment Purposes			
DISINFECTION			
TP035	500 E 8600 S -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP036	WEBSTER DR - CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP038	1500 E 9400 S -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP039	COLLEGE ST- CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP040	1400 E 6400 S -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP042	4670 S 1590 E -CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP043	CAROL WAY - CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP044	1784 E CREEK RD CHLORINATOR	0	Active
Treatment Purposes			
DISINFECTION			

TP045	MONITOR DR - CHLORINATOR + FLUORIDE	0	Active
Treatment Purposes			
DISINFECTION, FLUORIDATION			
TP046	TERMINAL RESERVOIR CHLORINATOR	0	Active
Treatment Purposes			
DISINFECTION			
TP047	CENTRAL PIPELINE FLUORIDE BUILDING		Proposed
Treatment Purposes			

Storage

ID	Name	Type	Effective Volume	Material	Status	Status Reason
ST001	2800 E 9400 S - 1MG STEEL	Ground	1,000,000 GAL	Steel	Active	
ST002	2800 E 9400 S - 2 MG STEEL	Ground	2,000,000 GAL	Steel	Active	
ST003	2300 E 9800 S - 6 MG CONCRETE	Ground	6,000,000 GAL	Concrete	Active	
ST004	4760 S NANILOA - 2MG CONCRETE	Ground	2,000,000 GAL	Concrete	Inactive	
ST005	4800 W 4500 S - 1 MG STEEL	Ground	1,000,000 GAL	Steel	Active	
ST006	4800 W 4500 S - 2 MG STEEL	Standpipe	2,000,000 GAL	Steel	Active	
ST007	4800 W 4500 S - EAST 5 MG STEEL	Ground	5,000,000 GAL	Steel	Inactive	
ST008	4800 W 4500 S - WEST 5 MG STEEL	Ground	5,000,000 GAL	Steel	Active	
ST009	6000 W 4700 S - 1 MG STEEL	Ground	1,000,000 GAL	Steel	Active	
ST010	6000 W 4700 S - 2 MG CONCRETE	Ground	2,000,000 GAL	Concrete	Active	
ST011	6000 W 4700 S - 6 MG CONCRETE	Ground	6,000,000 GAL	Concrete	Active	
ST012	3200 W 6200 S - 8 MG STEEL	Ground	8,000,000 GAL	Steel	Active	
ST013	3200 W 6200 S - NORTH 2 MG STEEL	Ground	2,000,000 GAL	Steel	Inactive	
ST014	3200 W 6200 S - SOUTH 2 MG STEEL	Ground	2,000,000 GAL	Steel	Active	
ST015	5200 W 6200 S - 2 MG CONCRETE	Ground	2,000,000 GAL	Concrete	Active	
OT001	EMERGENCY WATER TRAILERS (2000 GAL)				Active	Op Issued - Check
ST027	12.5 MG FINISHED STORAGE	Ground	12 MGL	Concrete	Proposed	
ST017	5700 W 10200 S - 3 MG CONCRETE	Ground	3,000,000 GAL	Concrete	Active	
ST018	6920 W 10200 S- 3 MG CONCRTE OLD BINGHAM	Ground	3,000,000 GAL	Concrete	Active	
ST019	5600 W 14500 S - 3 MG CONCRETE	Ground	3,000,000 GAL	Concrete	Active	
ST020	3800 W 5800 S (TERMINAL) 100 MG CONCRETE	Ground	100,000,000 GAL	Concrete	Active	
ST021	JVWTP (FINISHED) - 8 MG CONCRETE	Ground	8,000,000 GAL	Concrete	Active	
ST022	SERWTP (FINISHED) 1 MG CONCRETE	Ground	1,000,000 GAL	Concrete	Active	
ST023	SERWTP (FINISHED) - 3 MG CONCRETE	Ground	3,000,000 GAL	Concrete	Active	
ST025	8200 W NEW BINGHAM HWY 6MG CONCRETE	Ground	6,000,000 GAL	Concrete	Active	
ST016	3600 W 10200 S - 3 MG CONCRETE	Ground	3,000,000 GAL	Concrete	Active	
ST024	PRISON RESERVOIR	Ground	6,000,000 GAL	Concrete	Active	
ST026	BLUFFDALE TANK AT JVWTF	Ground	1,000,000 GAL	Steel	Active	

Total Effective Volume: 175,000,000 GAL

ATTACHMENT 3.b.

Pumping Stations

ID	Station Name	Status	Reason	Capacity	Availability
PF001	110 E 11400 S BOOSTER STATION	Active			Permanent
PF002	10730 S 1300 E BOOSTER STATION	Active			Permanent
PF003	4500 S 4800 W PF	Active			Permanent
PF004	3200 W 6200 S PF	Active			Permanent
PF005	PRESSURE ZONE C PUMP STATION	Inactive			Permanent
PF006	PRESSURE ZONE D SOUTH PUMP STATION	Inactive			Permanent
PF007	3145 W 11400 S BOOSTER STATION	Active			
PF008	13400 S. 3300 W.	Active			
PF009	5700 W 10200 S BOOSTER STATION	Active			
PF010	3600 W 10200 S BOOSTER STATION	Active			Permanent
PF011	6930 W 10200 S (OLD BINGHAM)	Active			
PF012	11800 S 3200 W	Active			
PF013	5820 S 3800 W (TERMINAL)	Active			
PF014	CASTO BOOSTER (DISCONNECTED)	Inactive			
PF015	1300 E 7800 S PUMP STATION	Active			Permanent
Total Capacity: 0 null					

Sources

ID	Source Name	Status	Reason	Source Type	Water Type	Period Of Operation
WS002A	OLMSTEAD DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS002B	MURDOCK DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS002C	JORDAN RIVER AT JNPS	Inactive		Intake	Surfacewater	1/1 - 12/31
WS002D	BATTLE CREEK INTAKE	Active	Op Issued - Check	Intake	Surfacewater	1/1 - 12/31
WS002E	GROVE CREEK INTAKE	Active	Op Issued - Check	Intake	Surfacewater	1/1 - 12/31
WS003	WILLOW CREEK WELL	Active		Well	Groundwater	1/1 - 12/31
WS004	1787 E CREEK RD WELL	Active		Well	Groundwater	1/1 - 12/31
WS005	1300 E 7800 S WELL	Active		Well	Groundwater	
WS006	1000 E 7800 S INJECTION WELL	Active		Well	Groundwater	
WS007	1000 E 8200 S WELL	Active		Well	Groundwater	
WS008	700 E 7700 S WELL	Active		Well	Groundwater	1/1 - 12/31
WS009	700 E 8200 S WELL	Active		Well	Groundwater	
WS010	1200 E 9400 S WELL	Inactive		Well	Groundwater	
WS011	300 E 4500 S WELL	Inactive		Well	Groundwater	
WS014	600 W 6400 S WELL ABANDONED	Inactive	Abandoned	Well	Groundwater	
WS015	1300 E 8600 S WELL	Inactive		Well	Groundwater	
WS016	CASTO SPRINGS	Inactive		Spring	Groundwater UDI Surface	
WS017	DRY CREEK SPRINGS	Inactive		Spring	Groundwater UDI Surface	
WS018	1300 E 8200 S WELL	Inactive		Well	Groundwater	
WS019	1300 E 7000 S WELL	Active		Well	Groundwater	

ATTACHMENT 3.b.

WS021	500 W 9150 S WELL	Inactive		Well	Groundwater	
WS022	2000 E 8600 S WELL	Active		Well	Groundwater	
WS023A	SLA DIV AT DEER CREEK	Active		Intake	Surfacewater	1/1 - 12/31
WS023B	DRAPER DIVERSION	Active		Intake	Surfacewater	
WS023C	BELL CANYON DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS023D	MIDDLE FORK DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS023E	SOUTH FORK DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS023F	ROCKY MOUTH DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS023G	LOWER BIG WILLOW DIVERSION	Active		Intake	Surfacewater	1/1 - 12/31
WS025	1510 W 14600 S WELL	Active		Well	Groundwater	1/1 - 12/31
WS026	PRISON WELL	Active		Well	Groundwater	1/1 - 12/31
WS027	2300 E 9800 S WELL	Active		Well	Groundwater	
WS028	SOLENA WAY WELL	Active		Well	Groundwater	
WS029	PLACEHOLDER	Inactive		Well	Groundwater	
WS030	ALBION WELL	Active		Well	Groundwater	1/1 - 12/31
WS031	NEWBURY DR WELL	Active		Well	Groundwater	1/1 - 12/31
WS032	1100 E 4500 S WELL	Inactive		Well	Groundwater	
WS033	SIESTA DR WELL	Inactive		Well	Groundwater	1/1 - 12/31
WS034	900 E 8500 S WELL	Active		Well	Groundwater	1/1 - 12/31
WS035	1500 E 8600 S WELL	Inactive		Well	Groundwater	1/1 - 12/31
WS036	WEBSTER DR WELL	Active		Well	Groundwater	1/1 - 12/31
WS037	PLACEHOLDER	Inactive		Well	Groundwater	
WS038	1500 E 9400 S	Inactive		Well	Groundwater	1/1 - 12/31
WS039	COLLEGE ST WELL	Inactive	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS040	1400 E 6400 S WELL	Active		Well	Groundwater	1/1 - 12/31
WS042	1590 E 4670 S WELL	Inactive	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS043	CAROL WAY WELL	Inactive	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS044	1784 E CREEK RD WELL	Inactive	Op Issued - Check	Well	Groundwater	
WS045	MONITOR DR WELL	Inactive		Well	Groundwater	1/1 - 12/31
WS046	COLLECTOR WELL	Inactive		Well	Groundwater	
WS047	1000 E 7800 S WELL	Inactive		Well	Groundwater	
WS048	8773 S 1300 W REASSIGNED TO WS054	Proposed		Well	Groundwater	
WS049	1324 W POLO LN REASSIGNED TO WS055	Proposed		Well	Groundwater	
WS050	9800 S 1300 W REASSIGNED TO WS056	Proposed		Well	Groundwater	
WS051	10621 S 1300 W REASSIGNED TO WS057	Proposed		Well	Groundwater	
WS052	1330 E 8200 S WELL	Active		Well	Groundwater	1/1 - 12/31
WS053	ETIENNE WAY WELL	Proposed		Well	Groundwater	
WS054	8773 S 1300 W - DW1	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS055	1324 W POLO LN - DW2	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS056	9800 S 1300 W-DW3	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS057	10621 S 1300 W - DW4	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS058	11059 S 1300 W - DW5	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS059	9911 S 2700 W - DW6	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS060	10940 S 2700 W - DW7	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS061	8400 S 1000 W - DW8	Active	Op Issued - Check	Well	Groundwater	1/1 - 12/31
WS062	8200 S 1000 W-SW1	Active	Op Issued - Check	Well	Groundwater	
WS063	8200 S 1100 W-SW2	Proposed		Well	Groundwater	1/1 - 12/31
WS064	PLACEHOLDER	Proposed		Well	Groundwater	
WS065	PLACEHOLDER	Proposed		Well	Groundwater	

WS066	PLACEHOLDER	Proposed	Well	Groundwater	
WS067	PLACEHOLDER	Proposed	Well	Groundwater	
WS068	7038 S COTTONWOOD ST WELL	Proposed	Well	Groundwater	1/1 - 12/31
WS069	2129 E MURRAY-HOLLADAY RD WELL	Proposed	Well	Groundwater	1/1 - 12/31
WS070	UTAH18016 - MWDSLS	Active	Consecutive Connection	Surfacewater	1/1 - 12/31
WS071	UTAH18160 DISTRIBUTION	Active	Consecutive Connection	Groundwater	1/1 - 12/31

Site Visit History

Date Visited	Survey Type	Surveyor	Notified Date	Next Inspection
04/02/2004	Sanitary Survey, Finished	SURVEYOR, DDW		
08/04/2008	Sanitary Survey, Finished	HANSEN, DAVID F	08/07/2008	
12/06/2010	Wellhead Protection Program	JOHNSON, KATE		
06/23/2011	Sanitary Survey, Finished	GONZALES, SHAWN	08/16/2011	09/30/2014
06/15/2014	Sanitary Survey, Finished		06/30/2014	

ATTACHMENT 3.b.

Bacterial Summary Report

Routine Bacteriological Sampling Requirements

Sample Reuired	Schedule Begin	Schedule End	Operation Begin	Operation End
80/Monthly/Routine	04/01/2006		1/1	12/31

Total Coliform Sample History

04/01/2015 - 05/31/2016

	Routine Sampling			Repeat Sampling			Source Sampling		
Month	# Sample	Tc Pos	Ecoli Pos	# Sample	Tc Pos	Ecoli Pos	# Sample	Tc Pos	Ecoli Pos
Apr-2015	119	0	0	0	0	0	0	0	0
May-2015	113	0	0	0	0	0	2	0	0
Jun-2015	129	0	0	0	0	0	0	0	0
Jul-2015	128	1	0	3	0	0	13	0	0
Aug-2015	121	0	0	0	0	0	0	0	0
Sep-2015	102	0	0	0	0	0	0	0	0
Oct-2015	105	0	0	0	0	0	0	0	0
Nov-2015	101	0	0	0	0	0	0	0	0
Dec-2015	212	0	0	0	0	0	0	0	0
Jan-2016	104	0	0	0	0	0	0	0	0
Feb-2016	104	0	0	0	0	0	0	0	0
Mar-2016	119	0	0	0	0	0	0	0	0
Apr-2016	119	1	0	3	0	0	0	0	0
May-2016	0	0	0	0	0	0	0	0	0

ATTACHMENT 3.b.

Water Monitoring Report

BACTERIOLOGICAL MONITORING

Sample Count	Type	Frequency	Schedule Begin	Schedule End	Analyte Name
80	Routine	Monthly	04/01/2006		COLIFORM (TCR)

Disinfection ByProduct Stage 2 Monitoring

Sample Count	Type	Frequency	Sample Label
8	Routine	Quarterly	UTAH18027 DS001 Sample ID below

ID	Site	Last Sample	Next Sample Due
MD019	DS-13800 S PONY EXPR	01/04/2016	04/01/2016 - 06/30/2016
MR001	DS-3700 W 2100 S	01/04/2016	04/01/2016 - 06/30/2016
MR002	DS-13953 LOOKOUT PK	01/04/2016	04/01/2016 - 06/30/2016
MD011	DS-10730 S 1300 E	01/04/2016	04/01/2016 - 06/30/2016
MR004	DS-700 W 11400 S	01/04/2016	04/01/2016 - 06/30/2016
MD010	DS-3610 S 1000 W	01/04/2016	04/01/2016 - 06/30/2016
MD018	DS-5700 W 10200 S BS	01/04/2016	04/01/2016 - 06/30/2016
MD022	DS-6000 W 4700 S	01/04/2016	04/01/2016 - 06/30/2016

Sample during the following months: August, November, February, May

Other Distribution Monitoring

Analyte Name	ID	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
LEAD AND COPPER	DS001	30	Routine	3 Years	2013	06/01/2016 - 09/30/2016
ASBESTOS	DS001	1	Routine	9 Years	06/16/2011	01/01/2020 - 12/31/2028

MONITORING REQUIREMENTS BY FACILITY

ID	NAME
RW002	COMBINED RAW WATER ENTERING JVWTP TP002

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
LT2 CRYPT,ECOLI,TURB	1	Routine	Monthly	03/16/2016	04/01/2016 - 04/30/2016
TOC AND ALKALINITY	1	Routine	Monthly	03/01/2016	04/01/2016 - 04/30/2016

RW023 — RAW WATER ENTERING SERWTP (TP023)

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
LT2 CRYPT,ECOLI,TURB	1	Routine	Monthly	03/16/2016	04/01/2016 - 04/30/2016
TOC AND ALKALINITY	1	Routine	Monthly	03/01/2016	04/01/2016 - 04/30/2016

SS001 — SAMPLING STATION - 3 22 27 28 30 45 53

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Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	01/12/2011	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	01/13/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	06/03/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	3 Years	01/06/2014	01/01/2017 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	9 Years	01/12/2011	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	02/18/2015	01/01/2017 - 12/31/2019

SS002 SAMPLING STATION -10 31 36 38

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	3 Years	01/06/2014	01/01/2017 - 12/31/2019
NITRATE	1	Routine	Yearly	03/31/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	05/01/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	9 Years	06/26/2013	01/01/2020 - 12/31/2028
SULFATE,SODIUM,TDS	1	Routine	3 Years	01/06/2014	01/01/2017 - 12/31/2019
VOC-COMPL	1	Routine	3 Years	01/06/2014	01/01/2017 - 12/31/2019

SS003 SAMPLING STATION - 07 09 15 18 34 35 52

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	01/05/2011	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	02/26/2015	01/01/2016 - 12/31/2016
PESTICIDES-COMPL	2	Routine	3 Years	07/07/2015	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	6 Years	01/05/2011	01/01/2014 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	9 Years	07/18/2012	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	07/07/2015	01/01/2017 - 12/31/2019

SS004 SAMPLING STATION -4 5 6 8 33 43 44 46 47

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	02/25/2016	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	02/25/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	07/15/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	6 Years	01/12/2011	01/01/2017 - 12/31/2022
SULFATE,SODIUM,TDS	1	Routine	9 Years	02/25/2016	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	06/04/2014	01/01/2017 - 12/31/2019

SS005 SAMPLING STATION - 19 40

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	06/30/2011	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	01/06/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	04/05/2016	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	6 Years	01/30/2013	01/01/2017 - 12/31/2022
SULFATE,SODIUM,TDS	1	Routine	9 Years	06/30/2011	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	01/06/2014	01/01/2017 - 12/31/2019

SS006 SAMPLING STATION - 11 32 39 42 69

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	02/10/2010	01/01/2011 - 12/31/2019
NITRATE	1	Routine	Yearly	05/07/2015	01/01/2016 - 12/31/2016
PESTICIDES-COMPL	2	Routine	3 Years	07/15/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	3 Years	07/15/2014	01/01/2017 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	9 Years	02/10/2010	01/01/2011 - 12/31/2019
VOC-COMPL	1	Routine	3 Years	07/15/2014	01/01/2017 - 12/31/2019

TP001 SWGWTP

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Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	Yearly	03/30/2015	01/01/2016 - 12/31/2016
NITRATE	1	Routine	Yearly	04/20/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	02/11/2015	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	6 Years	02/11/2015	01/01/2020 - 12/31/2025
SULFATE,SODIUM,TDS	1	Routine	Yearly	04/20/2016	01/01/2017 - 12/31/2017
VOC-COMPL	1	Routine	3 Years	05/14/2014	01/01/2015 - 12/31/2017

TP002 JVWTP

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
CARBON, TOTAL	1	Routine	Monthly	03/01/2016	04/01/2016 - 04/30/2016
INORGANICS-COMPL	1	Routine	9 Years	05/25/2011	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	03/23/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	05/07/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	9 Years	10/07/2009	01/01/2011 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	9 Years	05/25/2011	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	03/22/2016	01/01/2017 - 12/31/2019

TP023 SERWTP

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
CARBON, TOTAL	1	Routine	Monthly	03/01/2016	04/01/2016 - 04/30/2016
INORGANICS-COMPL	1	Routine	9 Years	05/25/2011	01/01/2020 - 12/31/2028
NITRATE	1	Routine	Yearly	03/23/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	05/07/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	9 Years	10/07/2009	01/01/2011 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	9 Years	05/25/2011	01/01/2020 - 12/31/2028
VOC-COMPL	1	Routine	3 Years	03/22/2016	01/01/2017 - 12/31/2019

WS025 1510 W 14600 S WELL

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	3 Years	02/16/2016	01/01/2017 - 12/31/2019
NITRATE	1	Routine	Yearly	02/16/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	2	Routine	3 Years	02/16/2016	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	3 Years	02/16/2016	01/01/2017 - 12/31/2019
SULFATE,SODIUM,TDS	1	Routine	3 Years	02/16/2016	01/01/2017 - 12/31/2019
VOC-COMPL	1	Routine	3 Years	02/16/2016	01/01/2017 - 12/31/2019

WS026 PRISON WELL

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
INORGANICS-COMPL	1	Routine	9 Years	01/20/2010	01/01/2011 - 12/31/2019
NITRATE	1	Routine	Yearly	01/15/2015	01/01/2016 - 12/31/2016
PESTICIDES-COMPL	2	Routine	3 Years	07/15/2014	01/01/2017 - 12/31/2019
RADS - COMPLIANCE	1	Routine	3 Years	05/08/2013	01/01/2014 - 12/31/2016
SULFATE,SODIUM,TDS	1	Routine	9 Years	01/20/2010	01/01/2011 - 12/31/2019
VOC-COMPL	1	Routine	3 Years	01/15/2015	01/01/2017 - 12/31/2019

WS061 8400 S 1000 W - DW8

ATTACHMENT 3.b.

Name	Sample Count	Type	Frequency	Last Sampled	Next Sample Due
COMBINED URANIUM	1	Routine	Quarterly	07/21/2015	01/01/2016 - 03/31/2016
GROSS ALPHA, EXCL. RADON & U	1	Routine	Quarterly	03/15/2016	04/01/2016 - 06/30/2016
INORGANICS-COMPL	1	Routine	3 Years	07/21/2015	01/01/2017 - 12/31/2019
NITRATE	1	Routine	Yearly	03/15/2016	01/01/2017 - 12/31/2017
PESTICIDES-COMPL	1	Routine	Quarterly	07/21/2015	10/01/2015 - 12/31/2015
RADIUM-226	1	Routine	Quarterly	03/15/2016	04/01/2016 - 06/30/2016
RADIUM-228	1	Routine	Quarterly	03/15/2016	04/01/2016 - 06/30/2016
SULFATE,SODIUM,TDS	1	Routine	3 Years	03/15/2016	01/01/2017 - 12/31/2019
VOC-COMPL	1	Routine	3 Years	07/21/2015	01/01/2017 - 12/31/2019

Grouped Source Sampling Stations

Sample Group ID	Sample Group
8166	UTAH SAMPLING STATION SS001

Source ID	Source Name	Sample Group Details	System
WS022	2000 E 8800 S WELL		UTAH18027 JORDAN VALLEY WCD
WS027	2300 E 9800 S WELL		UTAH18027 JORDAN VALLEY WCD
WS030	ALBION WELL		UTAH18027 JORDAN VALLEY WCD
WS053	ETIENNE WAY WELL	ETIENNE WAY	UTAH18027 JORDAN VALLEY WCD
WS045	MONITOR DR WELL		UTAH18027 JORDAN VALLEY WCD
WS028	SOLENA WAY WELL		UTAH18027 JORDAN VALLEY WCD
WS003	WILLOW CREEK WELL		UTAH18027 JORDAN VALLEY WCD

8031	UTAH SAMPLING STATION SS002

Source ID	Source Name	Sample Group Details	System
WS010	1200 E 9400 S WELL		UTAH18027 JORDAN VALLEY WCD
WS038	1500 E 9400 S		UTAH18027 JORDAN VALLEY WCD
WS031	NEWBURY DR WELL		UTAH18027 JORDAN VALLEY WCD
WS036	WEBSTER DR WELL		UTAH18027 JORDAN VALLEY WCD

8032	UTAH SAMPLING STATION SS003

Source ID	Source Name	Sample Group Details	System
WS007	1000 E 8200 S WELL		UTAH18027 JORDAN VALLEY WCD
WS018	1300 E 8200 S WELL		UTAH18027 JORDAN VALLEY WCD
WS015	1300 E 8600 S WELL		UTAH18027 JORDAN VALLEY WCD
WS052	1330 E 8200 S WELL	1330 E 8200 S	UTAH18027 JORDAN VALLEY WCD
WS035	1500 E 8600 S WELL		UTAH18027 JORDAN VALLEY WCD
WS009	700 E 8200 S WELL		UTAH18027 JORDAN VALLEY WCD
WS034	900 E 8500 S WELL		UTAH18027 JORDAN VALLEY WCD

8331	UTAH SAMPLING STATION SS004

ATTACHMENT 3.b.

Source ID	Source Name	Sample Group Details	System
WS006	1000 E 7800 S INJECTION WELL		UTAH18027 JORDAN VALLEY WCD
WS047	1000 E 7800 S WELL		UTAH18027 JORDAN VALLEY WCD
WS005	1300 E 7800 S WELL		UTAH18027 JORDAN VALLEY WCD
WS044	1784 E CREEK RD WELL		UTAH18027 JORDAN VALLEY WCD
WS004	1787 E CREEK RD WELL		UTAH18027 JORDAN VALLEY WCD
WS008	700 E 7700 S WELL		UTAH18027 JORDAN VALLEY WCD
WS043	CAROL WAY WELL		UTAH18027 JORDAN VALLEY WCD
WS046	COLLECTOR WELL		UTAH18027 JORDAN VALLEY WCD
WS033	SIESTA DR WELL		UTAH18027 JORDAN VALLEY WCD

8220 UTAH SAMPLING STATION SS005

Source ID	Source Name	Sample Group Details	System
WS019	1300 E 7000 S WELL		UTAH18027 JORDAN VALLEY WCD
WS040	1400 E 6400 S WELL		UTAH18027 JORDAN VALLEY WCD

8332 UTAH SAMPLING STATION SS006

Source ID	Source Name	Sample Group Details	System
WS032	1100 E 4500 S WELL		UTAH18027 JORDAN VALLEY WCD
WS042	1590 E 4670 S WELL		UTAH18027 JORDAN VALLEY WCD
WS069	2129 E MURRAY-HOLLADAY RD WELL		UTAH18027 JORDAN VALLEY WCD
WS011	300 E 4500 S WELL		UTAH18027 JORDAN VALLEY WCD
WS039	COLLEGE ST WELL		UTAH18027 JORDAN VALLEY WCD

Open Compliance Schedule

Type	Required Activities	Severity	Created	Due
CCR Schedules	Submit Consumer Confidence Report		01/01/2016	07/01/2016
CCR Schedules	Submit CCR Certification Letter		01/01/2016	10/01/2016

ATTACHMENT 3.b.

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
-5	-5	0	0	0

Physical Facility Points

Code	Description	Severity	Point Effective
M001	CURRENT EMERGENCY RESPONSE PROGRAM	REC	-10

Facility	Comments	Status	Determinated	Point Not Assessed	Point Assessed
	THE DISTRICT HAS AN ON-GOING EMERGENCY RESPONSE PROGRAM		10/22/1996		-10

Code	Description	Severity	Point Effective
TF09	FL PROCESS WASTES DISCHARGED IMPROPERLY	MIN	5

Facility	Comments	Status	Determinated	Point Not Assessed	Point Assessed
TP028 SOLENA WAY - FLUORIDATOR	Soft water treatment byproducts sent to sanitary sewer.	Active	06/23/2011		5

Total Effective Points: -5

Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Dist 4	Dist 4	0
Treatment	Treat 4	Treat 4	0

Total Effective Points: 0

ATTACHMENT 3.b.

State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

January 19, 2016

Ms. Claudia Wheeler
Metropolitan Water District of Salt Lake & Sandy
3430 East Danish Road
Cottonwood Heights, UT 84093

Dear Ms. Wheeler,

Subject: Preliminary Evaluation Report for Battle Creek and Grove Creek intakes
Metropolitan Water District - System no. UTAH18016, Sources nos. WS004 and WS005
Jordan Valley WCD – System no. UTAH18027, Sources nos. WS072 and WS073

Thank you and your consultant, John Schiess of Horrocks Engineering, for submitting a request to the Division of Water Quality to classify Battle and Grove Creeks as drinking water sources. With that request, our requirements for these Preliminary Evaluation Reports are met, and we concur with this submittal. We also consider this submittal to meet the requirements and intent of a full Drinking Water Source Protection plan for these intakes. You may combine future updates for these intakes with the updates associated with the Provo River and Aqueduct, or you may submit them separately. Those updates will be due on or before December 31, 2019.

If you have any further questions regarding this review or the Source Protection Program, please contact the Source Protection staff at (801) 536-4200. To help serve you more efficiently, please refer to your water system number in all correspondence.

Sincerely,

Kenneth H. Bousfield, P.E.
Director

KEJ/ssh

cc: Shazelle Terry, Jordan Valley Water Conservancy District, 15305 South 3200 West, Herriman, UT 84065
Marty Beaumont, Pleasant Grove City, 323 West 700 South, Pleasant Grove, UT 84062
John E. Schiess, Horrocks Engineers, 2162 West Grove Parkway, Pleasant Grove, Utah 84062
Royal DeLegge, Environmental Director, Salt Lake County Health Department, rdelegge@slco.org
Bryce C. Larsen, Environmental Director, Utah County Health Department, brycel@utahcounty.gov

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144830 • Salt Lake City, UT 84114-4830
Telephone (801) 536-4200 • Fax (801) 536-4211 • T.D.D. (801) 903-3978
www.deq.utah.gov

ATTACHMENT 3.b.

Attachment 4
Last Updated: 1/6/2016

	MCL and/or SMCL if applicable*	Battle Creek at Kiwanis Park			Grove Creek at trailhead			PRA inlet forebay (formerly) Murdock Canal		
		Average	Min	Max	Average	Min	Max	Average	Min	Max
Organics										
ABS @ 254nm		0.016	0.007	0.048	0.022	0.013	0.047	0.035	0.023	0.055
TOC (mg/L)		0.69	0.33	2.26	0.88	0.57	2.02	1.92	0.89	2.87
Minerals & Nutrients										
Alkalinity as CaCO3 (mg/L)		161.89	127.00	202.02	182.89	135.50	205.00	146.70	123.10	198.50
Calcium as CaCO3 (mg/L)		131.66	104.00	204.40	157.14	112.00	188.00	135.37	104.40	200.00
Conductivity (uS/cm)		334.35	267.00	582.00	404.91	355.00	581.00	371.26	287.00	471.00
pH (pH units)		8.37	7.98	8.59	8.38	8.14	8.59	8.29	8.05	8.76
Total Dissolved Solids (mg/L)	2000 mg/L/500 mg/L	210.04	166.00	378.00	255.28	216.00	592.00	236.98	180.00	294.00
Total Hardness (mg/L)		183.08	148.00	294.00	218.82	177.60	256.00	186.06	138.80	237.60
Turbidity (NTU)		12.44	0.36	164.80	5.15	<0.1	212.80	4.27	0.43	182.80
Anions										
Chloride (mg/L)	250 mg/L (SMCL only)	1.82	0.94	6.98	2.49	1.94	4.71	16.83	7.82	21.98
Fluoride (mg/L)	4.0 mg/L/2.0 mg/L	0.13	<0.1	0.26	0.22	0.16	0.30	0.17	<0.1	0.21
Nitrate (mg/L)	10 mg/L	0.38	0.25	0.64	0.14	<0.05	0.31	0.18	<0.05	0.44
Nitrite (mg/L)	1 mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phosphate (mg/L)		<0.05	<0.05	0.13	<0.05	<0.05	0.05	<0.05	<0.05	0.20
Sulfate (mg/L)	1000 mg/L/250 mg/L	25.27	14.76	106.18	39.26	20.43	53.82	41.69	20.76	53.83
Microbiological										
Cryptosporidium (cysts/L)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Coli (MPN/100 mL)		7.62	<1	196.80	12.89	<1	436.00	18.32	<1	360.90
Giardia (cysts/L)		0.02	0.00	0.40	0.00	0.00	0.00	0.64	0.00	5.20
HPC (MPN/mL)		232.82	<2	> 738	188.85	<2	> 738	545.61	<2	> 738
Total Coliform (MPN/100 mL)		927.15	36.40	> 2419.6	862.14	23.30	> 2419.6	1086.89	21.30	> 2419.6
Metals										
Aluminum (ug/L)	50 to 200 ug/L (SMCL only)	148.43	<5	1539.04	11.80	<5	132.91	54.03	<5	236.79
Antimony (ug/L)	6 ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic (ug/L)	10 ug/L	<1	<1	<1	<1	<1	<1	2.09	1.13	3.40
Barium (ug/L)	2000 ug/L	21.23	<1	26.59	19.70	<1	114.00	64.86	50.42	80.99
Beryllium (ug/L)	4 ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (ug/L)	5 ug/L	<1	<1	1.07	<1	<1	<1	<1	<1	<1
Chromium (ug/L)	100 ug/L	<1	<1	10.95	<1	<1	8.27	<1	<1	5.66
Copper (ug/L)	1000 ug/L (SMCL), 1300 ug/L action level	<1	<1	1.68	<1	<1	2.47	<1	<1	1.67
Iron (ug/L)	300 ug/L (SMCL only)	305.07	61.15	1175.11	157.07	<10	351.87	210.83	21.87	419.83
Lead (ug/L)	15 ug/L (action level)	<1	<1	7.88	<1	<1	2.78	<1	<1	2.27
Manganese (ug/L)	50 ug/L (SMCL only)	8.47	<1	49.30	2.30	<1	59.95	24.87	3.24	109.01
Molybdenum (ug/L)		1.78	<1	4.27	1.55	<1	3.14	<1	<1	1.21
Nickel (ug/L)		2.84	<1	5.26	2.92	<1	8.24	2.47	1.68	3.70
Selenium (ug/L)	50 ug/L	1.89	<1	7.20	1.13	<1	2.44	<1	<1	1.01
Silver (ug/L)	100 ug/L (SMCL only)	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium (ug/L)	2 ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium (ug/L)		<1	<1	4.34	<1	<1	3.79	<1	<1	2.10
Zinc (ug/L)	5000 ug/L (SMCL only)	2.30	<1	10.68	<1	<1	15.14	1.08	<1	7.46

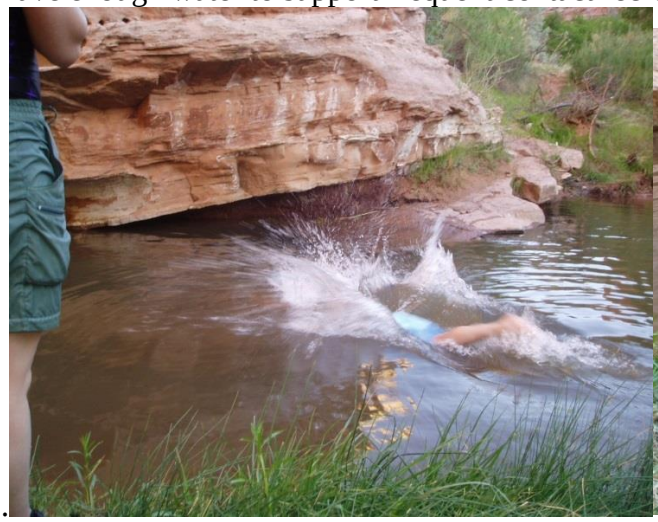
***MCL (Maximum Contaminant Level) is an enforceable level. Results above this level would result in a violation of regulations.**
SMCL (Secondary Maximum Contaminant Level) is non-enforceable. These levels are use to indicate levels at which the aesthetic quality of the water would be negatively impacted. Results above this level would not result in a violation but may result in customer complaints
Action levels for lead and copper are enforceable levels, however unlike MCLs, an exceedence of the action level would not result in a violation, however, the utility has to take action in order to get the level below the action level.

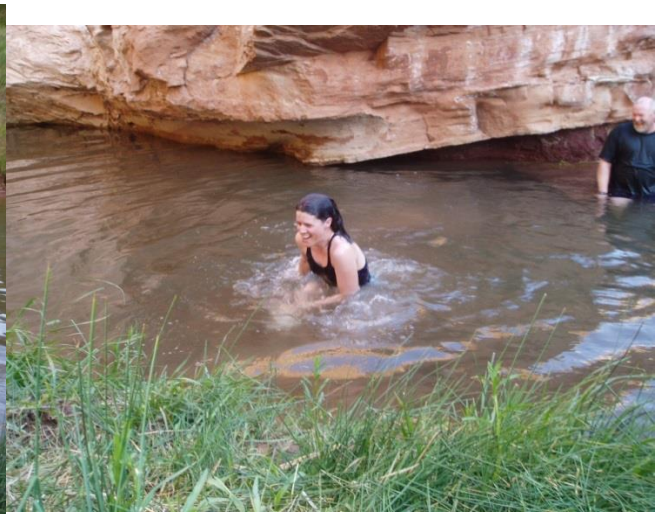
ATTACHMENT 3.c.

R317-2-13.1. Mill Creek, Grand County.

In R317-2-13, the proposal is to change the recreational use for Mill Creek in Grand County from Class 2B, infrequent primary and secondary contact recreation, to Class 2A, frequent primary and secondary contact recreation. Local residents have petitioned for the change and provided pictures of people swimming at a popular "swimming hole." Letters of supporting the change from the U.S. Bureau of Land Management and the Moab Area Watershed Partnership were also provided.

Mill Creek is currently impaired for *E. coli* in the lower reaches and this impairment is being investigated by the local Health Department. Frequent primary and secondary contact recreation occur in the summer months when people swim in the deeper pools. Frequent primary and secondary contact recreation are an existing use in the portions of the creek that are accessible and where the water is deep enough.
Mill Creek is also classified as Class 1C. However, no specific data are available for recreational activities in all of the tributaries or for the higher elevations of Mill Creek included in the change from Class 2B to 2A. Portions of these are unlikely to support frequent contact recreation because of lack of sufficient water and access. For instance, Mill Creek upstream of the diversion for Ken's Lake does not appear to have enough water to support frequent contact recreation.





Carl

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab Field Office
82 East Dogwood
Moab, Utah 84532
http://www.blm.gov/ut/st/en/fo/moab.html

RECEIVED
APR 13 2015
Utah Division of Water Quality
APR 09 2015

In Reply Refer To:
1010 (UTY010)

Mr. Walter Baker
Director Utah Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Subject: Recreational Beneficial Use Designation for Mill Creek in Grand County, UT

Dear Mr. Walter Baker,

The Moab Field Office of the Bureau of Land Management (BLM) manages a significant portion of the Mill Creek and Tributaries stream corridor. Specifically, BLM is responsible for management of the portion of Mill Creek where swimming is one of the recreational uses. The BLM Moab Field Office supports the local organization "Moab Area Watershed Partnership" and their decision to officially request a change to the Beneficial Use Classification of Mill Creek and Tributaries from Recreational Use Class 2B (protected for infrequent primary contact recreation) to Recreational Use Class 2A (protected for frequent primary contact recreation). This request is based on the level of frequent primary contact recreation that occurs in Mill Creek.

If you have any questions, or would like more information regarding this request, please contact Lisa Bryant at 435-259-2150 or Ann Marie Aubry at 435-259-2173.

Thank you for considering our request.

Sincerely,

Beth Ransel
Moab Field Manager

Document Date 4/13/2015
DWQ-2015-005030

ATTACHMENT 3.c.

Moab Area Watershed Partnership

Dave Erley,
Moab Area Watershed Partnership Chair
P. O. Box 46
Moab, UT 84532

Arne Hultquist
Southeastern Utah Watershed Coordinator
P. O. Box 46
Moab, UT 84532

Walter Baker
Utah Division of Water Quality, Director
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Subject: Recreational Use Designation for Mill Creek in Grand County, UT

Dear Walter Baker,

The Moab Area Watershed Partnership appreciates the support the Utah Division of Water Quality (UDWQ) has historically provided. Your monetary and monitoring support have provided a solid foundation for our efforts to improve water quality in Spanish and Castle Valley.

The Moab Area Watershed Management Plan requires the watershed coordinator to summarize and present the previous water year's data at our November meeting. The members consider the results and make recommendations for monitoring, projects and policy. During the last meeting the membership appreciated UDWQ's support for E. Coli sampling in our watersheds and discussed the recreational use designations of Mill Creek in Grand County. It is currently classified as 2B, protected for infrequent primary contact recreation. The MAWP considers this classification inappropriate for Mill Creek in Grand County because the creek is Moab's swimming hole. With this letter, the MAWP is requesting a "rule change" to R317-2 for the recreation classification of Mill Creek in Grand County to 2A, protected for frequent primary contact recreation.

Historically, Mill Creek was originally separated from classification with the "Colorado River and Tributaries from Lake Powell to the State line" because it is a cold water fishery (Class 3A), whereas the Colorado River is a warm water fishery (Class 3B). The Colorado River and tributaries from Lake Powell to the State line was originally a 2B stream but was changed to recreational class 2A because of the rafting and swimming that occurs seasonally. Swimming is also a very popular seasonal use of Mill Creek. Mill Creek originally received a 2B classification because it was a tributary to a 2B stream

What the MAWP does not understand is how to apply for and work through the use reclassification process. We are willing to help with the process if necessary. Please let us know how to proceed.

Sincerely, Dave Erley
Arne Hultquist

R317-2-14 Human Health Water Quality Criteria

In 2015, USEPA updated the ambient water quality criteria for the protection of human health for 92 pollutants. The existing Utah criteria for these pollutants are found in Table 2.14.6 in UAC R317-2-14. These criteria are intended to minimize the risk of adverse effects occurring to humans from chronic (lifetime) exposure to substances through the ingestion of drinking water and consumption of fish obtained from surface waters. USEPA bases the criteria on the most sensitive endpoint of cancer health effects, noncancer health effects or organoleptic (taste and odor) effects.

The 2015 USEPA revisions applied updated chemical and toxicological parameters to the USEPA 2000 methodology. The updates reflect the latest scientific information and EPA policies, including updated body weight, drinking water consumption rate, fish consumption rate, bioaccumulation factors, health toxicity values, and relative source contributions USEPA. Table 1 presents USEPA's current (2017) recommendations for human health criteria.

As with all criteria recommended by USEPA, Utah has the option of modifying the criteria to better reflect Utah-specific conditions. Table 1 compares the current USEPA criteria (2015 updates and others) with the criteria in Utah's water quality standards. As shown in Table 1, many of Utah's criteria are less stringent and some are unchanged or more stringent than the USEPA current recommendations. Table 2 lists the pollutants that are in Utah's Table 2.14.6 but are not currently included by USEPA. The last column in Tables 1 and 2 lists the recommended action for the Utah Water Quality Board. These changes are discussed in more detail below.

Exposure and bioaccumulation. Drinking water ingestion rates, fish consumption rates, and body weights are based on national data, and in the absence of Utah-specific data, are the best available to represent Utah. The toxicity and bioaccumulation values are peer-reviewed and based on a comprehensive review of the available data. The relative source contribution was also based on the currently available data in the literature. These parameters are recommended as the best available for deriving appropriate criteria for Utah.

Cancer risk. For cancer effects, USEPA's updated criteria are based on an excess lifetime cancer risk of one in a million (10^{-6}). When applicable, Utah's current criteria are based on this same cancer risk (see Footnote B, Table 2.14.6, UAC R317-2-14). No changes to the target cancer risk of 10^{-6} are proposed.

Applicable Use categories. USEPA's criteria are based on two exposure scenarios: water and organism and organism only. Utah elected to link the criteria for these two exposure scenarios to existing use classes. Table 2.14.6 identifies that the criteria apply to Class 1C waters for the water and organism criteria and to Class 3A-D waters for the organism only criteria. This means that both the criteria in Table 2.14.1 and Table 2.14.6 are applicable for Class 1C waters. Similarly, the criteria for organism-only in Table 2.14.6 and the criteria in Table 2.14.2 are applicable for Classes 3A-D for these waters. Some pollutants are listed in both tables. To help ensure that the applicable criteria are readily identifiable, a note is proposed to be added to Tables 2.14.1 and 2.14.2 that additional applicable criteria are included in Table 2.14.6 as follows:

TABLE 2.14.1
NUMERIC CRITERIA FOR DOMESTIC,
RECREATION, AND AGRICULTURAL USES

ATTACHMENT 4.a.

Parameter	Domestic Source	Recreation and Aesthetics		Agri-culture
	1C(1)	2A	2B	4

(1) ~~Reserved~~ Also applicable are the water + organism criteria in Table 2.14.6

TABLE 2.14.2
NUMERIC CRITERIA FOR AQUATIC WILDLIFE(8)

Parameter	Aquatic Wildlife				
	3A	3B	3C	3D	5

(8) Also applicable are the organism-only criteria in Table 2.14.6~~Reserved~~

To avoid confusion regarding the specific pollutants, the Chemical Abstracts Service (CAS) registry numbers will be added to Table 2.14.6.

Magnitude and Duration. The recommended magnitudes (numbers) are shown in Table 1. USEPA (2002) does not recommend a specific duration for the criteria. No duration is currently specified for the criteria in Table 2.14.6 in UAC R317-2 and the criteria are accordingly implemented as not-to-exceed.

Pollutants. As shown in Table 1, for pollutants that the current USEPA criteria and Utah criteria are identical, no action is recommended. For the pollutants corresponding to "Update to USEPA" in Table1, adoption of the current USEPA criteria are recommended. Pollutants currently listed in Table 2.14.6. without numeric criteria and no existing USEPA human health criteria were deleted.

The 2002 USEPA recommended human health criteria for arsenic are 0.08 and 0.14 µg/L for water + organism and organism-only, respectively. These criteria are much more stringent than the drinking water MCL of 10 µg/L. Like Utah, other Region 8 States have non-anthropogenic concentrations of arsenic that exceed the MCL and frequently would exceed the current USEPA criteria for protection of human health. Arsenic was not detected in 42% of the samples from the AWQMS data used for the 2016 *Integrated Report.* The analytical method (200.8) typically has a method detection limit of 1 µg/L which is insufficient for demonstrating compliance with the current USEPA criteria for the protection of human health. If the current USEPA criteria were adopted, the 58% of the 2016 *Integrated Report* samples in which arsenic was detected would exceed the standards. An implementation plan is needed prior to changing the arsenic criterion. Utah will continue to monitor progress in other Region 8 states as they develop implementation methods for the implementing the arsenic criteria. No changes are currently recommended for Utah's arsenic criteria for the protection of human health.

USEPA recommends a water + organism nitrate criterion of 10,000 µg/L which is the same as the MCL. USEPA does not have an organism-only criterion. The Class 1C criterion in Table 2.14.1 for nitrate is identical and a redundant criterion in Table 2.14.6 is unnecessary.

For 1,1,1-trichloroethane and 1,1-dichloroethylene, the existing Utah criteria in Table 2.14.6 are based on MCLs that are more stringent than the USEPA organism + water criteria. For these two pollutants, the USEPA human health criteria and adding the MCLs the Class 1C use in Table 2.14.1 are recommended.

USEPA recommends a water + organism criterion for manganese that is based on organoleptic effects and laundry staining. For manganese, Utah's existing Narrative Standards are judged adequately protective and adoption of the non-health related criteria unnecessary.

Utah's existing mercury water quality criteria was adopted prior to USEPA developing the fish tissue criterion 0.3 mg/kg wet weight for methylmercury. Utah's mercury criterion is based on a not exceeding 1 mg/kg in fish and a bioaccumulation factor of 25,000 from water to fish. While Utah's target fish concentration is three times higher than USEPA's criterion, the factor of three differences between USEPA's criterion and Utah's target fish concentration is not substantially different in the context of the bioaccumulation factor and other uncertainties in modeling mercury in the water to methylmercury in fish. DWQ continues to support the 12 ng/L as being adequately protective of human health. However, this criterion is not based on protecting aquatic life and should be relocated to Table 2.14.6. In addition, implementation methods for incorporating the tissue-based criterion into discharge permits are still being developed. These same issues are anticipated for implementing the USEPA tissue-based selenium criteria in discharge permits. DWQ anticipates similar implementation methods can be used for mercury and selenium and recommends that these two pollutants be evaluated in tandem. When these methods are developed, Utah can determine how best to incorporate a fish-tissue criterion for methylmercury.

Table 2 shows the pollutants currently listed in Table 2.14.6 but do not current USEPA criteria for the protection of human health. Pollutants without USEPA human health criteria or a drinking water MCL are proposed for deletion. Lead is proposed for deletion from Table 2.14.6 because lead is included in Table 2.14.1 for Class 1C waters. The remaining pollutants listed in Table 2 will be deleted from Table 2.14.6 and the MCLs added to Table 2.14.1 for Class 1C waters.

REFERENCES FOR HUMAN HEALTH CRITERIA

.https://www.epa.gov/wqc/human-health-documents

Fact Sheet: Human Health Ambient Water Quality Criteria: 2015 Update (PDF)(3 pp, 144 K)

EPA Response to Public Comments (PDF)(48 pp, 526 K)

Table comparing EPA's updated 2015 final human health criteria to previous criteria (PDF)(4 pp, 133 K)

Table Summarizing Updated Input Values for EPA's 2015 Final Updated Human Health Criteria (PDF)(4 pp, 160 K)

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	Acenaphthene (P)	83-32-9	70	90	Organoleptic	
Utah			670	990		Update to USEPA
USEPA	Acrolein (P)	107-02-8	3	400		
Utah			6.0	9 3	 Classes 3A-D	Update to USEPA
USEPA	Acrylonitrile (P)	107-13-1	0.061	7.0	10^{-6}	
Utah			0.051	0.25	10^{-6}	Update to USEPA
USEPA	Aldrin (P)	309-00-2	0.00000077	0.00000077	10^{-6}	
Utah			0.000049	0.000050	10^{-6}	Update to USEPA
USEPA	alpha-Hexachlorocyclohexane (HCH) (P)	319-84-6	0.00036	0.00039		
Utah			0.0026	0.0049	10^{-6}	Update to USEPA
USEPA	alpha-Endosulfan (P)	959-98-8	20	30		
Utah			62	89		Update to USEPA
USEPA	Anthracene (P)	120-12-7	300	400		
Utah			8300	40000		Update to USEPA
USEPA	Antimony (P)	7440360	5.6	640	MCL	
Utah			5.6	640		
USEPA	Arsenic (P)	7440382	0.018	0.14	10^{-6} ; MCL	
Utah			150 10	150	References Aquatic Life Class 1C	
USEPA	Asbestos (P)	1332214	7 million fibers/L	—	MCL	
Utah			7 million fibers/L			No action.
USEPA	Barium	7440393	1,000	—	MCL	

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Table 1
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Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			1000		Drinking Water	No action. Existing Class 1C criterion sufficiently protective
USEPA	Benzene (P)	71-43-2	0.58-2.1	16-58	MCL, 10^{-6}	
Utah			2.2	51	10^{-6}	Update to USEPA
USEPA	Benzidine (P)	92-87-5	0.00014	0.011	10^{-6}	
Utah			0.000086	0.00020	10^{-6}	Update to USEPA
USEPA	Benzo(a)anthracene (P)	56-55-3	0.0012	0.0013	10^{-6}	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Benzo(a)pyrene (P)	50-32-8	0.00012	0.00013	10^{-6} MCL	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Benzo(b)fluoranthene (P)	205-99-2	0.0012	0.0013	10^{-6}	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Benzo(k)fluoranthene (P)	207-08-9	0.012	0.013	10^{-6}	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Beryllium (P)	7440417	—	—	MCL	
Utah			— < 4	—	Class 1C	No action
USEPA	beta-Hexachlorocyclo-hexane (HCH) (P)	319-85-7	0.0080	0.014	10^{-6}	
Utah			0.0091	0.017	10^{-6}	Update to USEPA
USEPA	beta-Endosulfan (P)	33213-65-9	20	40		

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			62	89		Update to USEPA
USEPA	Bis(2-Chloro-1-methylethyl) Ether (P)	108-60-1	200	4,000		
Utah			—	—		Update to USEPA
USEPA	Bis(2-Chloroethyl) Ether (P)	111-44-4	0.030	2.2	10^{-6}	
Utah			0.030	0.53	10^{-6}	Update to USEPA
USEPA	Bis(2-Ethylhexyl) Phthalate (P)	117-81-7	0.32	0.37	MCL 10^{-6}	
Utah			1.2	2.2	10^{-6}	Update to USEPA
USEPA	Bis(Chloromethyl) Ether	542-88-1	0.00015	0.017		
Utah			—	—		Update to USEPA
USEPA	Bromoform (P)	75-25-2	7.0	120	MCL. 10^{-6}	
Utah			4.3	140	10^{-6}	Update to USEPA
USEPA	Butylbenzyl Phthalate (P)	85-68-7	0.10	0.10		
Utah			1,500	1,900		Update to USEPA
USEPA	Cadmium (P)	7440439	—	—	MCL	
Utah			— 10	— 0.25	Class 1C Classes 3A-D waters	No action on criteria. No current USEPA criteria, delete from Table 2.14.6
USEPA	Carbon Tetrachloride (P)	56-23-5	0.4	5	MCL 10^{-6}	
Utah			0.23	1.6	10^{-6}	Update to USEPA
USEPA	Chlordane (P)	57-74-9	0.00031	0.00032	MCL	

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			0.0008	0.00081 0.0043	10^{-6} Aquatic Life	Update to USEPA
USEPA	Chlorobenzene (P)	108-90-7	100	800	Organoleptic MCL	
Utah			100	1,600		Update to USEPA
USEPA	Chlorodibromo-methane (P)	124-48-1	0.80	21	MCL 10^{-6}	
Utah			0.4	13	10^{-6}	Update to USEPA
USEPA	Chloroform (P)	67-66-3	60	2,000	MCL	
Utah			5.7	470	10^{-6}	Update to USEPA
USEPA	Chlorophenoxy Herbicide (2,4-D)	94-75-7	1,300	12,000	MCL	
Utah			— 70	—	Drinking Water	Update to USEPA
USEPA	Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93-72-1	100	400	MCL	
Utah			— 10	—	Drinking Water	Update to USEPA
USEPA	Chromium (III) (P)	16065831	—	—	MCL	
Utah			— 0.05	— 74	Class 1C Classes 3A-3D	No current criteria, remove from Table 2.14.6
USEPA	Chromium (VI) (P)	18540299	—	—	MCL	
Utah			— 0.05	— 11	Class 1C Classes 3A-3D	No current criteria, remove from Table 2.14.6

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	Chrysene (P)	218-01-9	0.12	0.13	10^{-6} MCL	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Copper (P)	7440508	1,300	—	10^{-6} Organoleptic MCL	
Utah			1,300	—		No action
USEPA	Cyanide (P)	57-12-5	4	400	MCL	
Utah			140	140 5.2	 Aquatic Life (free cyanide)	Update criterion for free cyanide to USEPA
USEPA	Dibenzo(a,h)-anthracene (P)	53-70-3	0.00012	0.00013	10^{-6}	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Dichlorobromo-methane (P)	75-27-4	0.95	27	10^{-6} MCL	
Utah			0.55	17	10^{-6}	Update to USEPA
USEPA	Dieldrin (P)	60-57-1	0.0000012	0.0000012	10^{-6}	
Utah			0.000052	0.000054	10^{-6}	Update to USEPA
USEPA	Diethyl Phthalate (P)	84-66-2	600	600		
Utah			17,000	44,000		Update to USEPA
USEPA	Dimethyl Phthalate (P)	131-11-3	2,000	2,000		
Utah			270,000	1,100,000		Update to USEPA
USEPA	Di-n-Butyl Phthalate (P)	84-74-2	20	30		
Utah			2000	4500		Update to USEPA
USEPA	Dinitrophenols	25550-58-7	10	1,000		

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			— 69	— 5,300	2,4-Dinitrophenol	Update to USEPA, delete 2,4-Dinitrophenol
USEPA	Endosulfan Sulfate (P)	1031-07-8	20	40		
Utah			62	89		Update to USEPA
USEPA	Endrin (P)	72-20-8	0.03	0.03	MCL	
Utah			0.059	0.060		Update to USEPA
USEPA	Endrin Aldehyde (P)	7421-93-4	1	1		
Utah			0.29	0.3		Update to USEPA
USEPA	Ethylbenzene (P)	100-41-4	68	130	MCL	
Utah			530	2100		Update to USEPA
USEPA	Fluoranthene (P)	206-44-0	20	20		
Utah			130	140		Update to USEPA
USEPA	Fluorene (P)	86-73-7	50	70		
Utah			1100	5,300		Update to USEPA
USEPA	gamma-Hexachlorocyclo-hexane (HCH) [Lindane] (P)	58-89-9	4.2	4.4	MCL	
Utah			0.2	1.8	MCL	Update to USEPA
USEPA	Heptachlor (P)	76-44-8	0.0000059	0.0000059	10^{-6} MCL	
Utah			0.000079	0.000079	10^{-6}	Update to USEPA
USEPA	Heptachlor Epoxide (P)	1024-57-3	0.000032	0.000032	10^{-6} MCL	
Utah			0.000039	0.000039	10^{-6}	Update to USEPA

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	Hexachlorobenzene (P)	118-74-1	0.000079	0.000079	10^{-6} MCL	
Utah			0.00028	0.00029	10^{-6}	Update to USEPA
USEPA	Hexachlorobutadiene (P)	87-68-3	0.01	0.01	10^{-6} MCL	
Utah			0.44	18	10^{-6}	Update to USEPA
USEPA	Hexachlorocyclo-hexane (HCH) -Technical	608-73-1	0.0066	0.010		
Utah			—	— 0.08	Aquatic Life	Update to USEPA
USEPA	Hexachlorocyclo-pentadiene (P)	77-47-4	4	4	Organoleptic MCL	
Utah			40	1100		Update to USEPA
USEPA	Hexachloroethane (P)	67-72-1	0.1	0.1	10^{-6}	
Utah			1.4	3.3	10^{-6}	Update to USEPA
USEPA	Indeno(1,2,3-cd)pyrene (P)	193-39-5	0.0012	0.0013	10^{-6}	
Utah			0.0038	0.018	10^{-6}	Update to USEPA
USEPA	Isophorone (P)	78-59-1	34	1,800	10^{-6}	
Utah			35	960	10^{-6}	Update to USEPA
USEPA	Manganese	7439965	50	100	Organoleptic, laundry staining	
Utah			—	—		No action
USEPA	Methylmercury (P)	22967926	—	0.3 mg/kg	Tissue-based	

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah	Mercury		0.012	0.12	References Aquatic Life	No action at this time. No evidence that existing criteria are not protective of tissue-based criteria and implementation methods for implementation of tissue-based criteria need to be developed.
USEPA	Methoxychlor	72-43-5	0.02	0.02	MCL	
Utah			— 40	— 0.03	Class 1C Classes 3A-D waters	Update to USEPA
USEPA	Methyl Bromide (P)	74-83-9	100	10,000		
Utah			47	1500	10^{-6}	Update to USEPA
USEPA	Methylene Chloride (P)	75-09-2	20	1,000	MCL	
Utah			4.6	590	10^{-6}	Update to USEPA
USEPA	Nickel (P)	7440020	610	4,600	MCL	
Utah			100	4,600 52	100 is based on MCL, Classes 3A-3D	Update to USEPA, no current MCL
USEPA	Nitrates	14797558	10,000	—	MCL	
Utah			— 10,000	— 4,000	Class 1C Classes 3A-3D Indicator	No action, existing 10,000 criterion for Class 1C sufficiently protective
USEPA	Nitrobenzene (P)	98-95-3	10	600	organoleptic	

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			17	690		Update to USEPA
USEPA	Nitrosamines	—	0.0008	1.24		
Utah			—	—		Update to USEPA
USEPA	Nitrosodibutylamine	924163	0.0063	0.22	10^{-6}	
Utah			—	—		Update to USEPA
USEPA	Nitrosodiethylamine	55-18-5	0.0008	1.24	10^{-6}	
Utah			—	—		Update to USEPA
USEPA	Nitrosopyrrolidine	930552	0.016	34	10^{-6}	
Utah			—	—		Update to USEPA
USEPA	N-Nitrosodimethyl-amine (P)	62759	0.00069	3.0	10^{-6}	
Utah			0.00069	3.0	10^{-6}	No action
USEPA	N-Nitrosodi-n-Propylamine (P)	621647	0.0050	0.51	10^{-6}	
Utah			0.005	0.51	10^{-6}	No action
USEPA	N-Nitrosodiphenylamine (P)	86306	3.3	6.0	10^{-6}	
Utah			3.3	6.0	10^{-6}	No action
USEPA	Pentachlorobenzene	608-93-5	0.1	0.1		
Utah			—	—		Update to USEPA
USEPA	Pentachlorophenol (P)	87-86-5	0.03	0.04	10^{-6} Organoleptic. MCL	
Utah			0.27	3.0 15	Classes 3A-D.	Update to USEPA

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	Phenol (P)	108-95-2	4,000	300,000	Organoleptic	
Utah			10,000	860,000 10	Classes 3A-3D	Update to USEPA
USEPA	Polychlorinated Biphenyls (PCBs) (P)		0.000064	0.000064	10^{-6} MCL	
Utah			0.000064	0.000064	10^{-6}	No action
USEPA	Pyrene (P)	129-00-0	20	30		
Utah			830	4,000		Update to USEPA
USEPA	Selenium (P)	7782-49-2	170	4200	MCL	
Utah			4.6 50	4,200	4.6 references Class 3, Class 1C	Update to USEPA
USEPA	Tetrachloroethylene (P)	127-18-4	10	29	10^{-6} MCL	
Utah			0.69	3.3	10^{-6}	Update to USEPA
USEPA	Thallium (P)	7440-28-0	0.24	0.47		
Utah			0.24	0.47		No action
USEPA	Toluene (P)	108-88-3	57	520	MCL	
Utah			1,000	15,000		Update to USEPA
USEPA	Toxaphene (P)	8001-35-2	0.00070	0.00071	10^{-6} MCL	
Utah			0.00028	0.00028 0.0002	10^{-6} Classes 3A-D	Update to USEPA
USEPA	Trichloroethylene (P)	79-01-6	0.6	7	10^{-6} MCL	
Utah			2.5	30	10^{-6}	Update to USEPA

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	Vinyl Chloride (P)	75-01-4	0.022	1.6	10^{-6} risk MCL	
Utah			0.025	2.4		Update to USEPA
USEPA	Zinc (P)	7440-66-6	7,400	26,000	Organoleptic.	
Utah			7,400	26,000 120	Classes 3A-D	No action
USEPA	1,1,1-Trichloroethane (P)	71-55-6	10,000	200,000	MCL	
Utah			200	F	MCL for 200, F undefined	Update to USEPA, add MCL to Class 1C
USEPA	1,1,2,2-Tetrachloroethane (P)	79-34-5	0.2	3	10^{-6}	
Utah			0.17	4.0		Update to USEPA
USEPA	1,1,2-Trichloroethane (P)	79-00-5	0.55	8.9	10^{-6} MCL	
Utah			0.59	16	10^{-6}	Update to USEPA
USEPA	1,1-Dichloroethylene (P)	75-35-4	300	20,000	MCL	
Utah			7	7,100	7 based on MCL	Update to USEPA, add MCL to Class 1C
USEPA	1,2,4,5-Tetrachlorobenzene	95-94-3	0.03	0.03		
Utah			—	—		No action
USEPA	1,2,4-Trichlorobenzene (P)	120-82-1	0.071	0.076	MCL	
Utah			35	70		Update to USEPA

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Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
USEPA	1,2-Dichlorobenzene (P)	95-50-1	1,000	3,000	MCL	
Utah			420	1,300		Update to USEPA
USEPA	1,2-Dichloroethane (P)	107-06-2	9.9	650	MCL	
Utah			0.38	37	10^{-6}	Update to USEPA
USEPA	1,2-Dichloropropane (P)	78-87-5	0.90	31	10^{-6} MCL	
Utah			0.50	15	10^{-6}	Update to USEPA
USEPA	1,2-Diphenylhy-drazine (P)	122-66-7	0.03	0.2	10^{-6} risk	
Utah			0.036	0.20	10^{-6}	No action
USEPA	Trans-1,2-Dichloroethylene (P)	156-60-5	100	4,000	MCL	
Utah			100	10,000	100 based on MCL	Update to USEPA for organism only criterion
USEPA	1,3-Dichlorobenzene (P)	541-73-1	7	10		
Utah			320	960		Update to USEPA
USEPA	1,3-Dichloropropene (P)	542-75-6	0.27	12	10^{-6} risk	
Utah			0.34	21		Update to USEPA
USEPA	1,4-Dichlorobenzene (P)	106-46-7	300	900	MCL	
Utah			63	190		Update to USEPA
USEPA	2,3,7,8-TCDD (Dioxin) (P)	1746016	5.0E-9	5.1E-9	10^{-6} MCL	
Utah			5.0E-9	5.1E-9	10^{-6}	No action
USEPA	2,4,5-Trichlorophenol	95-95-4	300	600	Organoleptic.	

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Table 1
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Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			—	—		Update to USEPA
USEPA	2,4,6-Trichlorophenol (P)	88-06-2	1.5	2.8	10^{-6} risk Organoleptic.	
Utah			1.4	2.4	10^{-6}	Update to USEPA
USEPA	2,4-Dichlorophenol (P)	120-83-2	10	60	Organoleptic	
Utah			77	290		Update to USEPA
USEPA	2,4-Dimethylphenol (P)	105-67-9	100	3,000	Organoleptic	
Utah			380	850		Update to USEPA
USEPA	2,4-Dinitrophenol (P)	51-28-5	10	300		
Utah			69	5,300		Update to USEPA
USEPA	2,4-Dinitrotoluene (P)	121-14-2	0.049	1.7	10^{-6}	
Utah			0.11	3.4	10^{-6}	Update to USEPA
USEPA	2-Chloronaphthalene (P)	91-58-7	800	1,000		
Utah			1,000	1,600		Update to USEPA
USEPA	2-Chlorophenol (P)	95-57-8	30	800	Organoleptic	
Utah			81	150		Update to USEPA
USEPA	2-Methyl-4,6-Dinitrophenol (P)	534-52-1	2	30		
Utah			13.0	280		Update to USEPA
USEPA	3,3'-Dichlorobenzidine (P)	91-94-1	0.049	0.15	10^{-6}	
Utah			0.021	0.028	10^{-6}	Update to USEPA
USEPA	3-Methyl-4-Chlorophenol (P)	59-50-7	500	2,000	Organoleptic	
Utah			—	—		Update to USEPA
USEPA	p,p′-Dichlorodiphenyldichloroethane (DDD) (P)	72-54-8	0.00012	0.00012	10^{-6}	

ATTACHMENT 4.a.

Table 1
Comparison of 2017 USEPA Water Quality Criteria for Protection of Human Health with Utah Criteria in Table 2.14.6, UAC R317-2-14

Source	Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Utah			0.00031	0.00031	10^{-6}	Update to USEPA
USEPA	p,p′-Dichlorodiphenyldi-chloroethylene (DDE) (P)	72-55-9	0.000018	0.000018	10^{-6}	
Utah			0.00022	0.00022	10^{-6}	Update to USEPA
USEPA	p,p′-Dichlorodiphenyltri-chloroethane (DDT) (P)	50-29-3	0.000030	0.000030	10^{-6}	
Utah			0.00022	0.00022	10^{-6}	Update to USEPA
Table Notes	USEPA	United States Environmental Protection Agency				
	(P)	Priority Pollutant				
	10^{-6}	This criterion is based on carcinogenicity of 10^{-6} risk.				
	Organoleptic	The criterion for organoleptic (taste and order) effects may be more stringent.				
	MCL	USEPA has issued a Maximum Contaminant Level (MCL) for this chemical which may be more stringent.				
	Red font	Utah human health criterion that is less stringent than USEPA criterion				
	Black font	Utah human health criterion is the same as USEPA (2015) criterion				
	Green font	Utah human health criterion that is more stringent than USEPA criterion				
	Classes 3A-D Criteria	Some Class 3 criteria are hardness or pH-dependent. Values presented are from Table 2.14.2 in UAC R317-2-14				

ATTACHMENT 4.a.

Table 2
Pollutants Listed in Utah Table 2.14.6, UAC R317-2-14 Not Included in USEPA (2017) Water Quality Criteria for the Protection of Human Health

Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Lead				No criteria listed	Delete, Class 1C criterion = 15 µg/L adequately protective
Mercury				References criteria in aquatic life table	Leave until 0.3 mg/kg methylmercury criterion is adopted
Acenaphthylene	208-96-8			Polycyclic aromatic hydrocarbon, toxic pollutant.	No USEPA or Utah criteria, delete
Alachlor	15972-60-8	2.0		Herbicide, no USEPA water quality criteria, MCL = 2 µg/L	Add MCL to Class 1C criteria in Table 2.14.1
Atrazine	1912-24-9	3.0		Herbicide, no USEPA water quality criteria, MCL = 3 µg/L	Move to Class 1C criteria in Table 2.14.1
Benzo(g,h,i)perylene	191-24-2			Polycyclic aromatic hydrocarbon, toxic pollutant	No USEPA or Utah criteria, delete
Bis(2-chloroethoxy)methane	111-91-1			Solvent, chemical intermediate for food packaging coating	No USEPA or Utah criteria, delete
Carbofuran	1563-66-2	40		Carbamate pesticide, Hazardous Substance, no USEPA water quality criteria, MCL = 40 µg/L	Move to Class 1C criteria in Table 2.14.1
Chloroethane	75-00-3			No criteria listed in Utah table, no USEPA water quality criteria, Hazardous Substance	Delete
2-Chloroethylvinyl Ether	110-75-8			No criteria listed in Utah table, no USEPA water quality criteria, no MCL	Delete

ATTACHMENT 4.a.

Table 2
Pollutants Listed in Utah Table 2.14.6, UAC R317-2-14 Not Included in USEPA (2017) Water Quality Criteria for the Protection of Human Health

Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Dalapon	75-99-0	200		Banned herbicide, no USEPA water quality criteria, Hazardous Substance, MCL = 200 µg/L	Move to Class 1C criteria in Table 2.14.1
delta-BHC	319-86-8			Lindane isomers from peticides	No USEPA or Utah criteria, delete
Di(2ethylhexl)adipate	103-23-1	400		Plasticizer, no USEPA water quality criteria, MCL = 400 µg/L	Move to Class 1C criteria in Table 2.14.1
Dibromochloro-propane	96-12-8	0.2		Banned pesticide except Hawaii, no USEPA water quality criteria, MCL = 0.2 µg/L	Move to Class 1C criteria in Table 2.14.1
1,1-Dichloroethane	75-34-3			Grain fumigant and chemical intermediate. No criteria listed in Table 2.14.6, no USEPA water quality criteria, no MCL.	No Utah or USEPA criteria. Delete from Table
2,6-Dinitrotoluene	606-20-2			Chemical intermediate, hazardous substance.	No Utah or USEPA criteria. Delete from Table.
Dinoseb	88-85-7	7.0		Pre-emergent herbicide, miticide, no USEPA water quality criteria, MCL = 7.0 µg/L	Move to Class 1C criteria in Table 2.14.1
Diquat	85-00-7	20		Herbicide, algaecide, no USEPA water quality criteria, MCL = 20 µg/L	Move to Class 1C criteria in Table 2.14.1
Endothall	145-73-3	100		Herbicide, algaecide, no USEPA water quality criteria, MCL = 100 µg/L	Move to Class 1C criteria in Table 2.14.1

ATTACHMENT 4.a.

Table 2
Pollutants Listed in Utah Table 2.14.6, UAC R317-2-14 Not Included in USEPA (2017) Water Quality Criteria for the Protection of Human Health

Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Ethylene Dibromide	106-93-4	0.05		Banned fumigant, no USEPA water quality criteria, MCL = 0.05 µg/L	Move to Class 1C criteria in Table 2.14.1
Glyphosate	1071-83-6	700		Herbicide, MCL = 700 µg/L	Move to Class 1C criteria in Table 2.14.1
Haloacetic acids		60		No footnote E in Utah table, byproduct of drinking water disinfection, no USEPA water quality criteria, MCL = 60 µg/L	Delete. Class 1C is for potable water prior to treatment and haloacetic acids are disinfection byproducts from treatment.
Methyl Chloride	74-87-3			No footnote F in Utah table, Chemical intermediate, toxic pollutant, MCL = 3 µg/L	Move to Class 1C criteria in Table 2.14.1
2-Nitrophenol	88-75-5			Chemical intermediate, toxic pollutant.	No Utah or USEPA criteria. Delete from Table.
4-Nitrophenol				Chemical intermediate, hazardous substance	No Utah or USEPA criteria. Delete from Table.
Napthalene	91-20-3			Polycyclic aromatic hyrdrocarbon, toxic pollutant	No Utah or USEPA criteria. Delete from Table.
Ocamyl (vidate)	23135-22-0	400		Carbamate pesticide, see oxamyl or vydate, no USEPA water quality criteria, MCL = 400 µg/L.	Move to Class 1C criteria in Table 2.14.1
Phenanthrene	85-01-8			Polycyclic aromatic hyrdrocarbon, toxic pollutant	No Utah or USEPA criteria. Delete from Table.
Picloram	1918-02-1	500		Herbicide, no USEPA water quality criteria, MCL = 500 µg/L	Move to Class 1C criteria in Table 2.14.1

ATTACHMENT 4.a.

Table 2
Pollutants Listed in Utah Table 2.14.6, UAC R317-2-14 Not Included in USEPA (2017) Water Quality Criteria for the Protection of Human Health

Pollutant	CAS Number	Human Health for the consumption of Water + Organism (µg/L)	Human Health for the consumption of Organism Only (µg/L)	Notes	DWQ Recommendation
Simazine	122-34-9	4		Herbicide, no USEPA water quality criteria, MCL = 4 µg/L	Move to Class 1C criteria in Table 2.14.1
Styrene	100-42-5	100		Manufacturing plastics, Hazardous Substance, MCL = 100 µg/L	Move to Class 1C criteria in Table 2.14.1

ATTACHMENT 4.b.

Table 2.14.1, Fluoride

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
Director

FILE COPY

March 23, 2015

DAN MATTHEWS
JORDANELLE SSD
PO BOX 519
HEBER CITY, UT 84032

Document Date 3/23/2015
DWQ-2015-004306

Dear Water Provider:

Subject: Proposed Changes to Surface Water Standards that affect the Class 1C Drinking Water Use

I am writing to inform you about two proposed changes to Utah's water quality standards that affect the Class 1C drinking water use. Waters that are designated as Class 1C are protected for domestic purposes with prior treatment processes approved by the Utah Division of Drinking Water.

Prior to proposing these changes to the Utah Water Quality Board, I am seeking feedback from you, the water providers. Ultimately, if changes to the standards occur, the changes will be made in accordance with the required rulemaking procedures. These procedures include initial permission from the Utah Water Quality Board to initiate rulemaking, public notice and comment, and finally, formal adoption of the changes by the Water Quality Board.

The first proposed change is to the fluoride criterion. The existing fluoride criterion ranges from 1.4-2.4 mg/l depending on the maximum air temperature (UAC R317-2-14, Table 2.14.1). This range is based on the assumption that the higher the air temperature, the more water people will drink. The more water that people drink, the lower the criterion is to provide equivalent protection from the adverse effects of fluoride. However, the current USEPA maximum contaminant level (MCL) and maximum contaminant level goal (MCLG) for fluoride in finished culinary water is 4.0 mg/l and a temperature correction is no longer recommended. The proposed change is to revise the fluoride criterion for Class 1C waters to 4.0 mg/l with no temperature correction.

The second proposed change is to the procedures for conducting antidegradation reviews (UAC R317-2-3). Antidegradation is a complicated topic. In summary, degradation occurs when the concentration of a pollutant in a discharge is higher than the background concentration in the receiving water. When degradation is permitted, the antidegradation review is intended to ensure that the least degrading, feasible treatment option is used. The existing requirements for conducting antidegradation reviews include special procedures for Class 1C waters (UAC R317-2-3.5.d.):

> An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned.
>
> Depending upon the locations of the discharge and its proximity to downstream drinking water diversions, additional treatment or more stringent effluent limits or additional monitoring, beyond that which may otherwise be required to meet minimum technology standards or in stream water quality

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standards, may be required by the Director in order to adequately protect public health and the environment. Such additional treatment may include additional disinfection, suspended solids removal to make the disinfection process more effective, removal of any specific contaminants for which drinking water maximum contaminant levels (MCLs) exists, and/or nutrient removal to reduce the organic content of raw water used as a source for domestic water systems.

Additional monitoring may include analyses for viruses, Giardia, Cryptosporidium, other pathogenic organisms, and/or any contaminant for which drinking water MCLs exist. Depending on the results of such monitoring, more stringent treatment may then be required.

The additional treatment/effluent limits/monitoring which may be required will be determined by the Director after consultation with the Division of Drinking Water and the downstream drinking water users.

The proposed change is deletion of the requirement that "An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned." All of the remaining special procedures will be retained. At the time that this provision was added to the antidegradation review requirements, the requirements included several exceptions or "off ramps." The vast majority of discharge permits were issued based on these exceptions and antidegradation reviews were not required. At the explicit request of some of Utah's water providers, the requirement was added to conduct an antidegradation review and ensure the least degrading, feasible, treatment option for all discharges to Class 1C waters.

In 2010, the antidegradation review requirements were revised in response to court decisions in other states. One of these changes was to eliminate the previous exceptions to when an antidegradation review was required. Under the current requirements, an antidegradation review is required for all new discharges and for any increases in concentration or loading for existing discharges. Therefore, antidegradation reviews are required for all new or increased discharges to Class 1C waters. However, because of the requirement that "An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned," dischargers to Class 1C waters are still required to do an antidegradation review every time a discharge permit is renewed (every 5 years) even when the concentrations or volume of the discharge has not changed. These antidegradation reviews are perfunctory because they simply reiterate the previous antidegradation review and constitute an unnecessary regulatory burden.

Like you, the Division of Water Quality is committed to providing the highest level of protection to our drinking water source waters and these proposed changes do not decrease the existing protections for Class 1C waters. If you have any questions or concerns regarding these proposed changes, please contact Mr. Chris Bittner who is the Standards Coordinator (801-536-4371 or cbittner@utah.gov) by April 17, 2015. After this date, the revisions may be proposed to the Utah Water Quality Board.

Sincerely,

Walter L. Baker, P.E.
Director

WLB:cb:mc

cc: Ken Bousfield, Utah Division of Drinking Water

DWQ-2015-004066

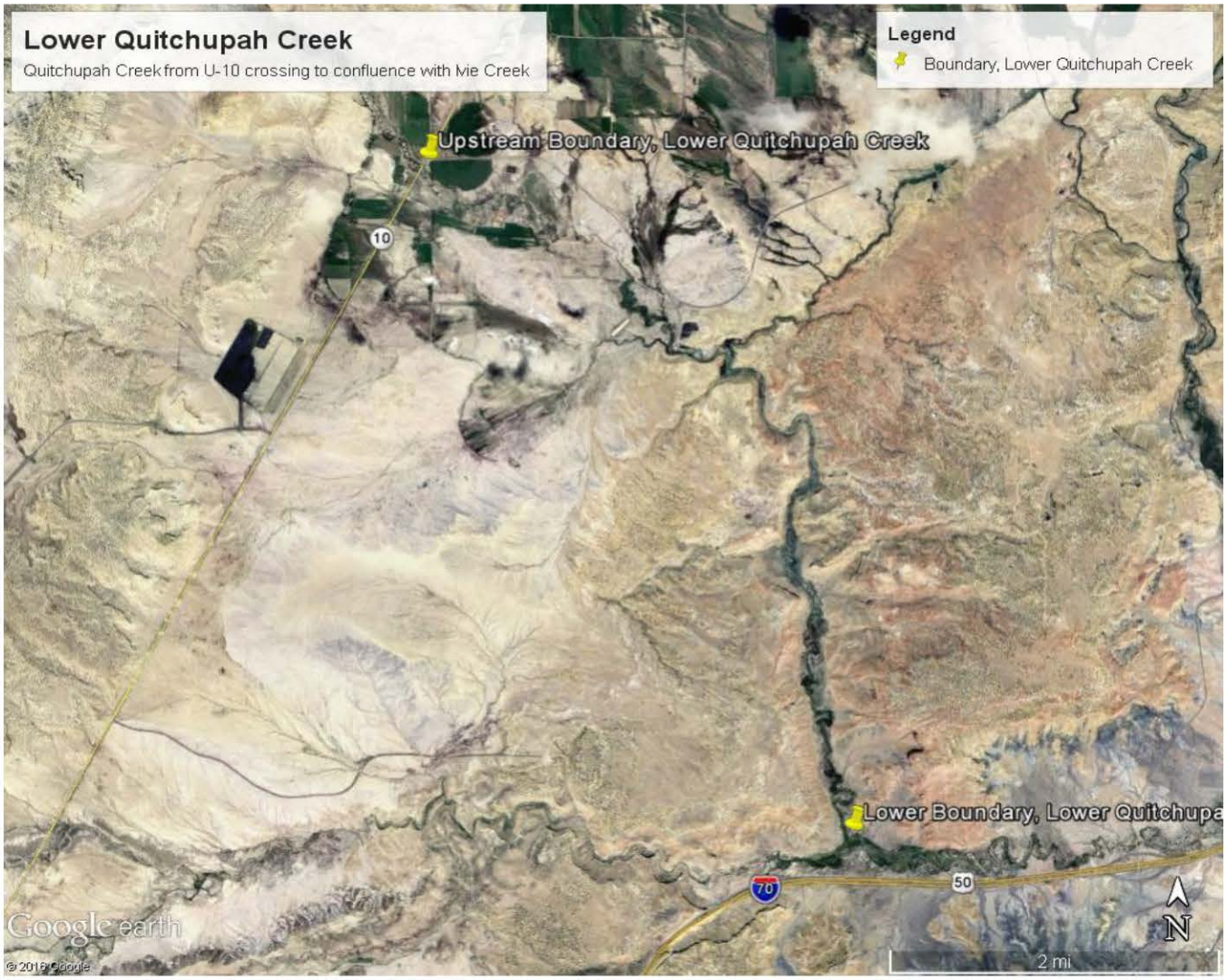
ATTACHMENT 4.c.

The regulatory basis for the TDS criteria was that higher (less stringent) TDS criteria would remain protective of the agricultural use (UAC R317-2-7.1.c). The rationale is documented in *Evaluation of Acceptable Sulfate Concentrations for Quitchupah and Ivie Creeks* (DWQ, October, 2009). When the site-specific criteria were proposed to the Water Quality Board, the tributaries were inadvertently omitted from the description. Therefore, the statewide TDS criterion of 1,200 mg/L applies to the tributaries.

In 2016, Quitchupah Creek was determined to be impaired for TDS based on data from one of the tributaries exceeding 1,200 mg/L. As shown on the following figure, the sources of water to the tributaries include irrigation return flows and effluent from coal mines.

The data and analyses that supported the site-specific TDS criteria for Quitchupah Creek apply equally to the tributaries.

ATTACHMENT 4.c.



ATTACHMENT 5

Mark-up of R317-2
Proposed deletions are shown with brackets [] and strikeout font.
Proposed additions are shown as underlined text

ATTACHMENT 5

R317. Environmental Quality, Water Quality.

R317-2. Standards of Quality for Waters of the State.

R317-2-1A. Statement of Intent.

Whereas the pollution of the waters of this state constitute a menace to public health and welfare, creates public nuisances, is harmful to wildlife, fish and aquatic life, and impairs domestic, agricultural, industrial, recreational and other legitimate beneficial uses of water, and whereas such pollution is contrary to the best interests of the state and its policy for the conservation of the water resources of the state, it is hereby declared to be the public policy of this state to conserve the waters of the state and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life, and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; to provide that no waste be discharged into any waters of the state without first being given the degree of treatment necessary to protect the legitimate beneficial uses of such waters; to provide for the prevention, abatement and control of new or existing water pollution; to place first in priority those control measures directed toward elimination of pollution which creates hazards to the public health; to insure due consideration of financial problems imposed on water polluters through pursuit of these objectives; and to cooperate with other agencies of the state, agencies of other states and the federal government in carrying out these objectives.

R317-2-1B. Authority.

These standards are promulgated pursuant to Sections 19-5-104 and 19-5-110.

R317-2-1C. Triennial Review.

The water quality standards shall be reviewed and updated, if necessary, at least once every three years. The Director will seek input through a cooperative process from stakeholders representing state and federal agencies, various interest groups, and the public to develop a preliminary draft of changes. Proposed changes will be presented to the Water Quality Board for information. Informal public meetings may be held to present preliminary proposed changes to the public for comments and suggestions. Final proposed changes will be presented to the Water Quality Board for approval and authorization to initiate formal rulemaking. Public hearings will be held to solicit formal comments from the public. The Director will incorporate

appropriate changes and return to the Water Quality Board to petition for formal adoption of the proposed changes following the requirements of the Utah Rulemaking Act, Title 63G, Chapter 3.

R317-2-2. Scope.

These standards shall apply to all waters of the state and shall be assigned to specific waters through the classification procedures prescribed by Sections 19-5-104(5) and 19-5-110 and R317-2-6.

R317-2-3. Antidegradation Policy.

3.1 Maintenance of Water Quality

Waters whose existing quality is better than the established standards for the designated uses will be maintained at high quality unless it is determined by the Director, after appropriate intergovernmental coordination and public participation in concert with the Utah continuing planning process, allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. However, existing instream water uses shall be maintained and protected. No water quality degradation is allowable which would interfere with or become injurious to existing instream water uses.

In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Federal Clean Water Act.

3.2 Category 1 Waters

Waters which have been determined by the Board to be of exceptional recreational or ecological significance or have been determined to be a State or National resource requiring protection, shall be maintained at existing high quality through designation, by the Board after public hearing, as Category 1 Waters. New point source discharges of wastewater, treated or otherwise, are prohibited in such segments after the effective date of designation. Protection of such segments from pathogens in diffuse, underground sources is covered in R317-5 and R317-7 and the rules for Individual Wastewater Disposal Systems (R317-501 through R317-515). Other diffuse sources (nonpoint sources) of wastes shall be controlled to the extent feasible through implementation of best management practices or regulatory programs.

Discharges may be allowed where pollution will be temporary and limited after consideration of the factors in R317-2-3.5.b.4., and where best management practices will be employed to minimize pollution effects.

ATTACHMENT 5

Waters of the state designated as Category 1 Waters are listed in R317-2-12.1.

3.3 Category 2 Waters

Category 2 Waters are designated surface water segments which are treated as Category 1 Waters except that a point source discharge may be permitted provided that the discharge does not degrade existing water quality. Discharges may be allowed where pollution will be temporary and limited after consideration of the factors in R317-2-.3.5.b.4., and where best management practices will be employed to minimize pollution effects. Waters of the state designated as Category 2 Waters are listed in R317-2-12.2.

3.4 Category 3 Waters

For all other waters of the state, point source discharges are allowed and degradation may occur, pursuant to the conditions and review procedures outlined in Section 3.5.

3.5 Antidegradation Review (ADR)

An antidegradation review will determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected.

An antidegradation review (ADR) may consist of two parts or levels. A Level I review is conducted to insure that existing uses will be maintained and protected.

Both Level I and Level II reviews will be conducted on a parameter-by-parameter basis. A decision to move to a Level II review for one parameter does not require a Level II review for other parameters. Discussion of parameters of concern is those expected to be affected by the proposed activity.

Antidegradation reviews shall include opportunities for public participation, as described in Section 3.5e.

a. Activities Subject to Antidegradation Review (ADR)

1. For all State waters, antidegradation reviews will be conducted for proposed federally regulated activities, such as those under Clean Water Act Sections 401 (FERC and other Federal actions), 402 (UPDES permits), and 404 (Army Corps of Engineers permits). The Director may conduct an ADR on any projects with the potential for major impact on the quality of waters of the state. The review will determine whether the proposed activity complies with the applicable antidegradation requirements for the particular receiving waters that may be affected.

2. For Category 1 Waters and Category 2 Waters, reviews shall be consistent with the requirement established in Sections 3.2 and 3.3, respectively.

3. For Category 3 Waters, reviews shall be consistent with the requirements established in this section

b. An Anti-degradation Level II review is not required where any of the following conditions apply:

1. Water quality will not be lowered by the proposed activity or for existing permitted facilities, water quality will not be further lowered by the proposed activity, examples include situations where:

(a) the proposed concentration-based effluent limit is less than or equal to the ambient concentration in the receiving water during critical conditions; or

(b) a UPDES permit is being renewed and the proposed effluent concentration and loading limits are equal to or less than the concentration and loading limits in the previous permit; or

(c) a UPDES permit is being renewed and new effluent limits are to be added to the permit, but the new effluent limits are based on maintaining or improving upon effluent concentrations and loads that have been observed, including variability; or

2. Assimilative capacity (based upon concentration) is not available or has previously been allocated, as indicated by water quality monitoring or modeling information. This includes situations where:

(a) the water body is included on the current 303(d) list for the parameter of concern; or

(b) existing water quality for the parameter of concern does not satisfy applicable numeric or narrative water quality criteria; or

(c) discharge limits are established in an approved TMDL that is consistent with the current water quality standards for the receiving water (i.e., where TMDLs are established, and changes in effluent limits that are consistent with the existing load allocation would not trigger an antidegradation review).

Under conditions (a) or (b) the effluent limit in an UPDES permit may be equal to the water quality numeric criterion for the parameter of concern.

3. Water quality impacts will be temporary and related only to sediment or turbidity and fish spawning will not be impaired,

4. The water quality effects of the proposed activity are expected to be temporary and limited. As general guidance, CWA Section 402 general discharge permits, CWA Section 404 general permits, or activities of short duration, will be deemed to have a temporary and limited effect on water quality where there is a reasonable factual basis to support such a conclusion. Factors to be considered in determining whether water quality effects will be

temporary and limited may include the following:

(a) Length of time during which water quality will be lowered.

(b) Percent change in ambient concentrations of pollutants of concern

(c) Pollutants affected

(d) Likelihood for long-term water quality benefits to the segment (e.g., dredging of contaminated sediments)

(e) Potential for any residual long-term influences on existing uses.

(f) Impairment of the fish spawning, survival and development of aquatic fauna excluding fish removal efforts.

c. Anti-degradation Review Process

For all activities requiring a Level II review, the Division will notify affected agencies and the public with regards to the requested proposed activity and discussions with stakeholders may be held. In the case of Section 402 discharge permits, if it is determined that a discharge will be allowed, the Director will develop any needed UPDES permits for public notice following the normal permit issuance process.

The ADR will cover the following requirements or determinations:

1. Will all Statutory and regulatory requirements be met?

The Director will review to determine that there will be achieved all statutory and regulatory requirements for all new and existing point sources and all required cost-effective and reasonable best management practices for nonpoint source control in the area of the discharge. If point sources exist in the area that have not achieved all statutory and regulatory requirements, the Director will consider whether schedules of compliance or other plans have been established when evaluating whether compliance has been assured. Generally, the "area of the discharge" will be determined based on the parameters of concern associated with the proposed activity and the portion of the receiving water that would be affected.

2. Are there any reasonable less-degrading alternatives?

There will be an evaluation of whether there are any reasonable non-degrading or less degrading alternatives for the proposed activity. This question will be addressed by the Division based on information provided by the project proponent. Control alternatives for a proposed activity will be evaluated in an effort to avoid or minimize degradation of the receiving water. Alternatives to be considered, evaluated, and implemented to the extent feasible, could include pollutant trading, water conservation, water recycling and reuse, land application, total containment, etc.

ATTACHMENT 5

For proposed UPDES permitted discharges, the following list of alternatives should be considered, evaluated and implemented to the extent feasible:

(a) innovative or alternative treatment options

(b) more effective treatment options or higher treatment levels

(c) connection to other wastewater treatment facilities

(d) process changes or product or raw material substitution

(e) seasonal or controlled discharge options to minimize discharging during critical water quality periods

(f) pollutant trading

(g) water conservation

(h) water recycle and reuse

(i) alternative discharge locations or alternative receiving waters

(j) land application

(k) total containment

(l) improved operation and maintenance of existing treatment systems

(m) other appropriate alternatives

An option more costly than the cheapest alternative may have to be implemented if a substantial benefit to the stream can be realized. Alternatives would generally be considered feasible where costs are no more than 20% higher than the cost of the discharging alternative, and (for POTWs) where the projected per connection service fees are not greater than 1.4% of MAGHI (median adjusted gross household income), the current affordability criterion now being used by the Water Quality Board in the wastewater revolving loan program. Alternatives within these cost ranges should be carefully considered by the discharger. Where State financing is appropriate, a financial assistance package may be influenced by this evaluation, i.e., a less polluting alternative may receive a more favorable funding arrangement in order to make it a more financially attractive alternative.

It must also be recognized in relationship to evaluating options that would avoid or reduce discharges to the stream, that in some situations it may be more beneficial to leave the water in the stream for instream flow purposes than to remove the discharge to the stream.

3. Does the proposed activity have economic and social importance?

Although it is recognized that any activity resulting in a discharge to surface waters will have positive and negative aspects, information must be submitted by the applicant that any discharge or increased discharge will be of economic or social importance in the

area.

The factors addressed in such a demonstration may include, but are not limited to, the following:

(a) employment (i.e., increasing, maintaining, or avoiding a reduction in employment);

(b) increased production;

(c) improved community tax base;

(d) housing;

(e) correction of an environmental or public health problem; and

(f) other information that may be necessary to determine the social and economic importance of the proposed surface water discharge.

4. The applicant may submit a proposal to mitigate any adverse environmental effects of the proposed activity (e.g., instream habitat improvement, bank stabilization). Such mitigation plans should describe the proposed mitigation measures and the costs of such mitigation. Mitigation plans will not have any effect on effluent limits or conditions included in a permit (except possibly where a previously completed mitigation project has resulted in an improvement in background water quality that affects a water quality-based limit). Such mitigation plans will be developed and implemented by the applicant as a means to further minimize the environmental effects of the proposed activity and to increase its socio-economic importance. An effective mitigation plan may, in some cases, allow the Director to authorize proposed activities that would otherwise not be authorized.

5. Will water quality standards be violated by the discharge?

Proposed activities that will affect the quality of waters of the state will be allowed only where the proposed activity will not violate water quality standards.

6. Will existing uses be maintained and protected?

Proposed activities can only be allowed if "existing uses" will be maintained and protected. No UPDES permit will be allowed which will permit numeric water quality standards to be exceeded in a receiving water outside the mixing zone. In the case of nonpoint pollution sources, the non-regulatory Section 319 program now in place will address these sources through application of best management practices to ensure that numeric water quality standards are not exceeded.

7. If a situation is found where there is an existing use which is a higher use (i.e., more stringent protection requirements) than

that current designated use, the Director will apply the water quality standards and anti-degradation policy to protect the existing use. Narrative criteria may be used as a basis to protect existing uses for parameters where numeric criteria have not been adopted. Procedures to change the stream use designation to recognize the existing use as the designated use would be initiated.

d. Special Procedures for Drinking Water Sources

[~~An Antidegradation Level II Review will be required by the Director for discharges to waters with a Class 1C drinking water use assigned.~~] Depending upon the locations of the discharge and its proximity to downstream drinking water diversions, additional treatment or more stringent effluent limits or additional monitoring, beyond that which may otherwise be required to meet minimum technology standards or in stream water quality standards, may be required by the Director in order to adequately protect public health and the environment. Such additional treatment may include additional disinfection, suspended solids removal to make the disinfection process more effective, removal of any specific contaminants for which drinking water maximum contaminant levels (MCLs) exists, and/or nutrient removal to reduce the organic content of raw water used as a source for domestic water systems.

Additional monitoring may include analyses for viruses, Giardia, Cryptosporidium, other pathogenic organisms, and/or any contaminant for which drinking water MCLs exist. Depending on the results of such monitoring, more stringent treatment may then be required.

The additional treatment/effluent limits/monitoring which may be required will be determined by the Director after consultation with the Division of Drinking Water and the downstream drinking water users.

e. Public Notice

The public will be provided notice and an opportunity to comment on the conclusions of all completed antidegradation reviews. When possible, public notice on the antidegradation review conclusions will be combined with the public notice on the proposed permitting or certifying action. In the case of UPDES permits, public notice will be provided through the normal permitting process, as all draft permits are public noticed for 30 days, and public comment solicited, before being issued as a final permit. The Statement of Basis for the draft UPDES permit will contain information on how the ADR was addressed including results of the Level I and Level II reviews. In the case of Section 404 permits from the Corps of Engineers, the Division of Water Quality will develop any needed 401 Certifications and the public

notice may be published in conjunction with the US Corps of Engineers public notice procedures. Other permits requiring a Level II review will receive a separate public notice according to the normal State public notice procedures. The public will be provided notice and an opportunity to comment whenever substantive changes are made to the implementation procedures referenced in Subsection R317-2-3.5.f.

f. Implementation Procedures

The Director shall establish reasonable protocols and guidelines (1) for completing technical, social, and economic need demonstrations, (2) for review and determination of adequacy of Level II ADRs and (3) for determination of additional treatment requirements. Protocols and guidelines will consider federal guidance and will include input from local governments, the regulated community, and the general public. The Director will inform the Water Quality Board of any protocols or guidelines that are developed.

R317-2-4. Colorado River Salinity Standards.

In addition to quality protection afforded by these rules to waters of the Colorado River and its tributaries, such waters shall be protected also by requirements of "Proposed Water Quality Standards for Salinity including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975" and a supplement dated August 26, 1975, entitled "Supplement, including Modifications to Proposed Water Quality Standards for Salinity including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975", as approved by the seven Colorado River Basin States and the U.S. Environmental Protection Agency, as updated by the 1978 Revision and the 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005, 2008, and 2011 reviews of the above documents.

R317-2-5. Mixing Zones.

A mixing zone is a limited portion of a body of water, contiguous to a discharge, where dilution is in progress but has not yet resulted in concentrations which will meet certain standards for all pollutants. At no time, however, shall concentrations within the mixing zone be allowed which are acutely lethal as determined by bioassay or other approved procedure. Mixing zones may be delineated for the purpose of guiding sample collection procedures and to determine permitted effluent limits. The size of the chronic mixing zone in rivers and streams shall not to exceed 2500 feet and the size of an acute mixing zone shall not exceed 50% of stream width nor have a residency time of greater than 15 minutes. Streams with a flow equal

to or less than twice the flow of a point source discharge may be considered to be totally mixed. The size of the chronic mixing zone in lakes and reservoirs shall not exceed 200 feet and the size of an acute mixing zone shall not exceed 35 feet. Domestic wastewater effluents discharged to mixing zones shall meet effluent requirements specified in R317-1-3.

5.1 Individual Mixing Zones. Individual mixing zones may be further limited or disallowed in consideration of the following factors in the area affected by the discharge:

a. Bioaccumulation in fish tissues or wildlife,

b. Biologically important areas such as fish spawning/nursery areas or segments with occurrences of federally listed threatened or endangered species,

c. Potential human exposure to pollutants resulting from drinking water or recreational activities,

d. Attraction of aquatic life to the effluent plume, where toxicity to the aquatic life is occurring.

e. Toxicity of the substance discharged,

f. Zone of passage for migrating fish or other species (including access to tributaries), or

g. Accumulative effects of multiple discharges and mixing zones.

R317-2-6. Use Designations.

The Board as required by Section 19-5-110, shall group the waters of the state into classes so as to protect against controllable pollution the beneficial uses designated within each class as set forth below. Surface waters of the state are hereby classified as shown in R317-2-13.

6.1 Class 1 -- Protected for use as a raw water source for domestic water systems.

a. Class 1A -- Reserved.

b. Class 1B -- Reserved.

c. Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water

6.2 Class 2 -- Protected for recreational use and aesthetics.

a. Class 2A -- Protected for frequent primary contact recreation where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water. Examples include, but are not limited to, swimming, rafting, kayaking, diving, and water skiing.

b. Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

6.3 Class 3 -- Protected for use by aquatic wildlife.

a. Class 3A -- Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

b. Class 3B -- Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.

c. Class 3C -- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

d. Class 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

e. Class 3E -- Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.

6.4 Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

6.5 Class 5 -- The Great Salt Lake.

a. Class 5A Gilbert Bay

Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation south of the Union Pacific Causeway, excluding all of the Farmington Bay south of the Antelope Island Causeway and salt evaporation ponds.

Beneficial Uses -- Protected for frequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

b. Class 5B Gunnison Bay

Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation north of the Union Pacific Causeway and west of the Promontory Mountains, excluding salt evaporation ponds.

Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

c. Class 5C Bear River Bay

Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation north of the Union Pacific Causeway and east of the Promontory Mountains, excluding salt evaporation

ponds.

Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

d. Class 5D Farmington Bay

Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation east of Antelope Island and south of the Antelope Island Causeway, excluding salt evaporation ponds.

Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

e. Class 5E Transitional Waters along the Shoreline of the Great Salt Lake Geographical Boundary -- All waters below approximately 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs and streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional waters change corresponding to the fluctuation of open water elevation.

Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

R317-2-7. Water Quality Standards.

7.1 Application of Standards

a. The numeric criteria listed in R317-2-14 shall apply to each of the classes assigned to waters of the State as specified in R317-2-6. It shall be unlawful and a violation of these rules for any person to discharge or place any wastes or other substances in such manner as may interfere with designated uses protected by assigned classes or to cause any of the applicable standards to be violated, except as provided in R317-1-3.1.

b. At a minimum, assessment of the beneficial use support for waters of the state will be conducted biennially and available for a 30-day period of public comment and review. Monitoring locations and target indicators of water quality standards shall be prioritized and published yearly. For water quality assessment purposes, up to 10 percent of the representative samples may exceed the minimum or maximum criteria for dissolved oxygen, pH, E. coli, total dissolved solids, and temperature, including situations where such criteria have been adopted on a site-specific basis.

c. Site-specific standards may be adopted by rulemaking where

biomonitoring data, bioassays, or other scientific analyses indicate that the statewide criterion is over or under protective of the designated uses or where natural or un-alterable conditions or other factors as defined in 40 CFR 131.10(g) prevent the attainment of the statewide criteria as prescribed in Subsections R317-2-7.2, and R317-2-7.3, and Section R317-2-14.

7.2 Narrative Standards

It shall be unlawful, and a violation of these rules, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures; or determined by biological assessments in Subsection R317-2-7.3.

7.3 Biological Water Quality Assessment and Criteria

Waters of the State shall be free from human-induced stressors which will degrade the beneficial uses as prescribed by the biological assessment processes and biological criteria set forth below:

a. Quantitative biological assessments may be used to assess whether the purposes and designated uses identified in R317-2-6 are supported.

b. The results of the quantitative biological assessments may be used for purposes of water quality assessment, including, but not limited to, those assessments required by 303(d) and 305(b) of the federal Clean Water Act (33 U.S.C. 1313(d) and 1315(b)).

c. Quantitative biological assessments shall use documented methods that have been subject to technical review and produce consistent, objective and repeatable results that account for methodological uncertainty and natural environmental variability.

d. If biological assessments reveal a biologically degraded water body, specific pollutants responsible for the degradation will not be formally published (i.e., Biennial Integrated Report, TMDL) until a thorough evaluation of potential causes, including nonchemical stressors (e.g., habitat degradation or hydrological modification or criteria described in 40 CFR 131.10 (g)(1 - 6) as defined by the Use Attainability Analysis process), has been conducted.

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R317-2-8. Protection of Downstream Uses.

All actions to control waste discharges under these rules shall be modified as necessary to protect downstream designated uses.

R317-2-9. Intermittent Waters.

Failure of a stream to meet water quality standards when stream flow is either unusually high or less than the 7-day, 10-year minimum flow shall not be cause for action against persons discharging wastes which meet both the requirements of R317-1 and the requirements of applicable permits.

R317-2-10. Laboratory and Field Analyses.

10.1 Laboratory Analyses

All laboratory examinations of samples collected to determine compliance with these regulations shall be performed in accordance with standard procedures as approved by the Director by the Utah Office of State Health Laboratory or by a laboratory certified by the Utah Department of Health.

10.2 Field Analyses

All field analyses to determine compliance with these rules shall be conducted in accordance with standard procedures specified by the Utah Division of Water Quality.

R317-2-11. Public Participation.

Public notices and public hearings will be held for the consideration, adoption, or amendment of the classifications of waters and standards of purity and quality. Public notices shall be published at least twice in a newspaper of general circulation in the area affected at least 30 days prior to any public hearing. The notice will be posted on a State public notice website at least 45 days before any hearing and a notice will be mailed at least 30 days before any hearing to the chief executive of each political subdivision and other potentially affected persons.[~~to review all proposed revisions of water quality standards, designations and classifications, and public meetings may be held for consideration of discharge requirements set to protect water uses under assigned classifications.~~]

R317-2-12. Category 1 and Category 2 Waters.

12.1 Category 1 Waters.

In addition to assigned use classes, the following surface waters of the State are hereby designated as Category 1 Waters:

a. All surface waters geographically located within the outer

boundaries of U.S. National Forests whether on public or private lands with the following exceptions:

1. Category 2 Waters as listed in R317-2-12.2.

2. Weber River, a tributary to the Great Salt Lake, in the Weber River Drainage from Uintah to Mountain Green.

b. Other surface waters, which may include segments within U.S. National Forests as follows:

1. Colorado River Drainage

Calf Creek and tributaries, from confluence with Escalante River to headwaters.

Sand Creek and tributaries, from confluence with Escalante River to headwaters.

Mamie Creek and tributaries, from confluence with Escalante River to headwaters.

Deer Creek and tributaries, from confluence with Boulder Creek to headwaters (Garfield County).

Indian Creek and tributaries, through Newspaper Rock State Park to headwaters.

2. Green River Drainage

Price River (Lower Fish Creek from confluence with White River to Scofield Dam.

Range Creek and tributaries, from confluence with Green River to headwaters.

Strawberry River and tributaries, from confluence with Red Creek to headwaters.

Ashley Creek and tributaries, from Steinaker diversion to headwaters.

Jones Hole Creek and tributaries, from confluence with Green River to headwaters.

Green River, from state line to Flaming Gorge Dam.

Tollivers Creek, from confluence with Green River to headwaters.

Allen Creek, from confluence with Green River to headwaters.

3. Virgin River Drainage

North Fork Virgin River and tributaries, from confluence with East Fork Virgin River to headwaters.

East Fork Virgin River and tributaries from confluence with North Fork Virgin River to headwaters.

4. Kanab Creek Drainage

Kanab Creek and tributaries, from irrigation diversion at confluence with Reservoir Canyon to headwaters.

5. Bear River Drainage

Swan Creek and tributaries, from Bear Lake to headwaters.

North Eden Creek, from Upper North Eden Reservoir to headwaters.

Big Creek and tributaries, from Big Ditch diversion to headwaters.

Woodruff Creek and tributaries, from Woodruff diversion to headwaters.

6. Weber River Drainage

Burch Creek and tributaries, from Harrison Boulevard in Ogden to headwaters.

Hardscrabble Creek and tributaries, from confluence with East Canyon Creek to headwaters.

Chalk Creek and tributaries, from Main Street in Coalville to headwaters.

Weber River and tributaries, from Utah State Route 32 near Oakley to headwaters.

7. Jordan River Drainage

City Creek and tributaries, from City Creek Water Treatment Plant to headwaters (Salt Lake County).

Emigration Creek and tributaries, from Hogle Zoo to headwaters (Salt Lake County).

Red Butte Creek and tributaries, from Foothill Boulevard in Salt Lake City to headwaters.

Parley's Creek and tributaries, from 13th East in Salt Lake City to headwaters.

Mill Creek and tributaries, from Wasatch Boulevard in Salt Lake City to headwaters.

Big Cottonwood Creek and tributaries, from Wasatch Boulevard in Salt Lake City to headwaters.

Little Willow Creek and tributaries, from diversion to headwaters (Salt Lake County.)

Bell Canyon Creek and tributaries, from Lower Bells Canyon Reservoir to headwaters (Salt Lake County).

South Fork of Dry Creek and tributaries, from Draper Irrigation Company diversion to headwaters (Salt Lake County).

8. Provo River Drainage

Upper Falls drainage above Provo City diversion (Utah County).

Bridal Veil Falls drainage above Provo City diversion (Utah County).

Lost Creek and tributaries, above Provo City diversion (Utah County).

9. Sevier River Drainage

Chicken Creek and tributaries, from diversion at canyon mouth to headwaters.

Pigeon Creek and tributaries, from diversion to headwaters.

East Fork of Sevier River and tributaries, from Kingston diversion to headwaters.

Parowan Creek and tributaries, from Parowan City to headwaters.

Summit Creek and tributaries, from Summit City to headwaters.

Braffits Creek and tributaries, from canyon mouth to headwaters.

Right Hand Creek and tributaries, from confluence with Coal Creek to headwaters.

10. Raft River Drainage

Clear Creek and tributaries, from state line to headwaters (Box Elder County).

Birch Creek (Box Elder County), from state line to headwaters.

Cotton Thomas Creek from confluence with South Junction Creek to headwaters.

11. Western Great Salt Lake Drainage

All streams on the south slope of the Raft River Mountains above 7000' mean sea level.

Donner Creek (Box Elder County), from irrigation diversion to Utah-Nevada state line.

Bettridge Creek (Box Elder County), from irrigation diversion to Utah-Nevada state line.

Clover Creek, from diversion to headwaters.

All surface waters on public land on the Deep Creek Mountains.

12. Farmington Bay Drainage

Holmes Creek and tributaries, from Highway US-89 to headwaters (Davis County).

Shepard Creek and tributaries, from Haight Bench diversion to headwaters (Davis County).

Farmington Creek and tributaries, from Haight Bench Canal diversion to headwaters (Davis County).

Steed Creek and tributaries, from Highway US-89 to headwaters (Davis County).

12.2 Category 2 Waters.

In addition to assigned use classes, the following surface waters of the State are hereby designated as Category 2 Waters:

a. Green River Drainage

Deer Creek, a tributary of Huntington Creek, from the forest boundary to 4800 feet upstream.

Electric Lake.

R317-2-13. Classification of Waters of the State (see R317-2-6).

a. Colorado River Drainage

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13.1 Upper Colorado River Basin

TABLE

[~~Paria River and tributaries, from state line to headwaters~~		~~2B~~	~~3C~~	~~4~~]Paria River and tributaries, from state line to headwaters		2B	3C	4
[~~All tributaries to Lake Powell, except as listed below~~		~~2B~~	~~3B~~	~~4~~]All tributaries to Lake Powell except as listed below:		2B	3B	4
[~~Tributaries to Escalante River from confluence with Boulder Creek to headwaters, including Boulder Creek~~		~~2B~~	~~3A~~	~~4~~] Tributaries to Escalante River from confluence with Boulder Creek to headwaters, including Boulder Creek		2B	3A	4
[~~Dirty Devil River and tributaries, from Lake Powell to Fremont River~~		~~2B~~	~~3C~~	~~4~~] Dirty Devil River and tributaries, from Lake Powell to Fremont River		2B	3C	4
[~~Deer Creek and tributaries, from confluence with Boulder Creek to headwaters~~		~~2B~~	~~3A~~	~~4~~] Deer Creek and tributaries, from confluence with Boulder Creek to headwaters		2B	3A	4
[~~Fremont River and tributaries, from confluence with Muddy Creek to Capitol~~				
~~Reef National Park, except as listed below~~	~~1C~~	~~2B~~	~~3C~~	~~4~~]Freemont River and tributaries from				

confluence with Muddy Creek to Capitol Reef National Park, except as listed below:	1C	2B	3C	4
[~~Pleasant Creek and tributaries, from confluence with Fremont River to East boundary of Capitol Reef National Park~~		~~2B~~	~~3C~~	~~4~~
] Pleasant Creek and tributaries, from confluence with Fremont River to East boundary of Capitol Reef National Park		2B	3C	4
[~~Pleasant Creek and tributaries, from East boundary of Capitol Reef National Park to headwaters~~	~~1C~~	~~2B~~	~~3A~~	
] Pleasant Creek and tributaries, from East boundary of Capitol Reef National Park to headwaters	1C	2B	3A	
[~~Fremont River and tributaries, through Capitol Reef National Park to headwaters~~	~~1C~~	~~2A~~	~~3A~~	~~4~~
]Fremont River and tributaries, through Capitol Reef National Park to headwaters	1C	2A	3A	4
[~~Muddy Creek and tributaries, from confluence with Fremont River to Highway U-10 crossing, except as listed below~~		~~2B~~	~~3C~~	~~4~~
]Muddy Creek and tributaries, from Confluence with Fremont River to Highway U-10 crossing, except as listed below		2B	3C	4
Muddy Creek from confluence with Fremont River to				

confluence with Ivie Creek	2B	3C	4*
Muddy Creek and tributaries from the confluence with Ivie Creek to U-10	2B	3C	4*
Ivie Creek and its tributaries from the confluence with Muddy Creek to the confluence with Quitchupah Creek	2B	3C	4*
Ivie Creek and its tributaries from the confluence with Quitchapah Creek to U-10, except as listed below:	2B	3C	4*
Quitchupah Creek from the confluence with Ivie Creek to U-10	2B	3C	4*
Quitchupah Creek and. tributaries, from Highway U-10 crossing to headwaters	2B	3A	4
Ivie Creek and tributaries, from Highway U-10 to headwaters	2B	3A	4
[~~Quitchupah Creek and Tributaries, from Highway U-10 crossing to headwaters~~	~~2B~~	~~3A~~	~~4~~
~~Ivie Creek and tributaries, from Highway U-10 to headwaters~~	~~2B~~	~~3A~~	~~4~~
~~Muddy Creek and tributaries, from Highway U-10 crossing to headwaters~~	~~1C~~ ~~2B~~	~~3A~~	~~4~~
]Muddy Creek and tributaries, from Highway U-10 crossing to headwaters	1C 2B	3A	4
[~~San Juan River and~~			

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~~Tributaries, from Lake Powell to state line except As listed below:~~	~~1C~~	~~2A~~	~~3B~~	~~4~~
]San Juan River and tributaries from Lake Powell to state line except as listed below:	1C	2A	3B	4
[~~Johnson Creek and tributaries, from confluence with Recapture Creek to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Johnson Creek and tributaries, from confluence with Recapture Creek to headwaters	1C	2B	3A	4
[~~Verdure Creek and tributaries, from Highway US-191 crossing to headwaters~~		~~2B~~	~~3A~~	~~4~~
] Verdure Creek and tributaries, from Highway US-191 crossing to headwaters		2B	3A	4
[~~North Creek and tributaries, from confluence with Montezuma Creek to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] North Creek and tributaries, from confluence with Montezuma Creek to headwaters	1C	2B	3A	4
[~~South Creek and tributaries, from confluence with Montezuma Creek to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] South Creek and tributaries, from confluence with Montezuma Creek to headwaters	1C	2B	3A	4
[~~Spring Creek and tributaries, from confluence with Vega Creek to headwaters~~		~~2B~~	~~3A~~	~~4~~
] Spring Creek and tributaries, from confluence with Vega Creek to headwaters		2B	3A	4

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[~~Montezuma Creek and tributaries, from U.S. Highway 191 to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Montezuma Creek and tributaries, from U.S. Highway 191 to headwaters	1C	2B	3A	4
[~~Colorado River and tributaries, from Lake Powell to state line except as listed below~~	~~1C~~	~~2A~~	~~3B~~	~~4~~
]Colorado River and tributaries, from Lake Powell to state line except as listed below:	1C	2A	3B	4
[~~Indian Creek and tributaries, through Newspaper Rock State Park to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Indian Creek and tributaries, through Newspaper Rock State Park to headwaters	1C	2B	3A	4
[~~Kane Canyon Creek and tributaries, from confluence with Colorado River to headwaters~~		~~2B~~	~~3C~~	~~4~~
]Kane Canyon Creek and tributaries, from confluence with Colorado River to headwaters		2B	3C	4
[~~Mill Creek and tributaries, from confluence with Colorado River to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Mill Creek and tributaries, from confluence with Colorado River to headwaters	1C	2A	3A	4
Castle Creek from confluence with the Colorado River to Seventh Day Adventist Diversion	1C	2A	3B	4*
Onion Creek from the confluence with Colorado River to road				

crossing above Stinking Springs	1C	2A	3B	4*
[~~Dolores River and tributaries, from confluence with Colorado River to state line~~	~~2B~~		~~3C~~	~~4~~
] Dolores River and tributaries, from confluence with Colorado River to state line	2B		3C	4
[~~Roc Creek and tributaries, from confluence with Dolores River to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Roc Creek and tributaries, from confluence with Dolores River to headwaters	2B	3A		4
[~~LaSal Creek and tributaries, from state line to headwaters~~	~~2B~~	~~3A~~		~~4~~
] LaSal Creek and tributaries from state line to headwaters	2B	3A		4
[~~Lion Canyon Creek and tributaries, from state line to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Lion Canyon Creek and tributaries, from state line to headwaters	2B	3A		4
[~~Little Dolores River and tributaries, from confluence with Colorado River to state line~~	~~2B~~		~~3C~~	~~4~~
] Little Dolores River and tributaries, from confluence with Colorado River to state line	2B		3C	4
[~~Bitter Creek and tributaries, from confluence with Colorado River to headwaters~~	~~2B~~		~~3C~~	~~4~~
] Bitter Creek and tributaries, from confluence with Colorado River to headwaters	2B		3C	4

(*) Site-specific criteria are associated with this use.

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b. Green River Drainage

TABLE

Green River and tributaries, from confluence with Colorado River to state line, except as listed below:[-]	1C	2A	3B	4
[~~Thompson Creek and tributaries from Interstate Highway 70 to headwaters~~		~~2B~~	~~3C~~	~~4~~
] Thompson Creek and tributaries from Interstate 70 to headwaters		2B	3C	4
[~~San Rafael River and tributaries, from confluence with Green River to confluence with Ferron Creek~~		~~2B~~	~~3C~~	~~4~~
] San Rafael River and tributaries from confluence with Green River to confluence with Ferron Creek, except as listed below:		2B	3C	
San Rafael River from the confluence with the Green River to Buckhorn Crossing		2B	3C	4*
San Rafael River from Buckhorn Crossing to the confluence with Huntington Creek and Cottonwood Creek		2B	3C	4*
[~~Ferron Creek and tributaries, from confluence with San Rafael River to Millsite Reservoir~~		~~2B~~	~~3C~~	~~4~~
~~Ferron Creek and tributaries, from Millsite Reservoir to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~

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]

Ferron Creek and tributaries, from confluence with San Rafael River to Millsite Reservoir, except as listed below:		2B	3C	4
Ferron Creek from the confluence with San Rafael River to Highway 10		2B	3C	4*
Ferron Creek and tributaries, from Millsite Reservoir to headwaters	1C	2B	3A	4
~~[Huntington Creek and tributaries, from confluence with Cottonwood Creek to Highway U-10 crossing~~		~~2B~~	~~3C~~	~~4~~
] Huntington Creek and tributaries, from confluence with Cottonwood Creek to Highway U-10 crossing		2B	3C	4*
~~[Huntington Creek and tributaries, from Highway U-10 crossing to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Huntington Creek and tributaries from Highway U-10 crossing to headwaters	1C	2B	3A	4
~~[Cottonwood Creek and tributaries, from confluence with Huntington Creek to Highway U-57 crossing~~		~~2B~~	~~3C~~	~~4~~
] Cottonwood Creek and tributaries from confluence with Huntington Creek to Highway U-57 crossing, except as listed below:		2B	3C	4
Cottonwood Creek from the confluence with Huntington Creek to U-57		2B	3C	4*

Rock Canyon Creek from the confluence with Cottonwood Creek to headwaters		2B	3C	4*
[~~Cottonwood Creek and tributaries, from Highway U-57 crossing to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Cottonwood Creek and tributaries from Highway U-57 crossing to headwaters	1C	2B	3A	4
[~~Cottonwood Canal, Emery County~~	~~1C~~	~~2B~~	~~3E~~	~~4~~
] Cottonwood Canal, Emery County	1C	2B	3E	4
[~~Price River and tributaries, from confluence with Green River to Carbon Canal Diversion at Price City Golf Course~~		~~2B~~	~~3C~~	~~4~~
~~Except as listed below~~] Price River and tributaries, from confluence with Green River to Carbon Canal Diversion at Price City Golf Course, except as listed below		2B	3C	4
Price River and tributaries from confluence with Green River to confluence with Soldier Creek		2B	3C	4*
Price River and tributaries from the confluence with Soldier Creek to Carbon Canal Diversion		2B	3C	4*
[~~Grassy Trail Creek and tributaries, from Grassy Trail Creek Reservoir to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Grassy Trail Creek and tributaries, from Grassy Trail				

Creek Reservoir to headwaters	1C	2B 3A	4
~~[Price River and tributaries, from Carbon Canal Diversion at Price City Golf Course to Price City Water Treatment Plant intake.~~		~~2B 3A~~	~~4~~
] Price River and tributaries, from Carbon Canal Diversion at Price City Golf Course to Price City Water Treatment Plant intake		2B 3A	4
~~[Price River and tributaries, from Price City Water Treatment Plant intake to headwaters~~	~~1C~~	~~2B 3A~~	~~4~~
] Price River and tributaries, from Price City Water Treatment Plant intake to headwaters	1C	2B 3A	4
~~[Range Creek and tributaries, from confluence with Green River to Range Creek Ranch~~		~~2B 3A~~	~~4~~
] Range Creek and tributaries, from confluence with Green River to Range Creek Ranch		2B 3A	4
~~[Range Creek and tributaries, from Range Creek Ranch to headwaters~~	~~1C~~	~~2B 3A~~	~~4~~
] Range Creek and tributaries, from Range Creek Ranch to headwaters	1C	2B 3A	4
~~[Rock Creek and tributaries, from confluence with Green River to headwaters~~		~~2B 3A~~	~~4~~
] Rock Creek and tributaries, from confluence with Green River to headwaters		2B 3A	4
~~[Nine Mile Creek and tributaries, from confluence with Green River to headwaters~~		~~2B 3A~~	~~4~~
]			

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Nine Mile Creek and tributaries, from confluence with Green River to headwaters	2B	3A		4
[~~Pariette Draw and tributaries, from confluence with Green River to headwaters~~	~~2B~~	~~3B~~	~~3D~~	~~4~~
] Pariette Draw and tributaries, from confluence with Green River to headwaters	2B	3B	3D	4
[~~Willow Creek and tributaries (Uintah County), from confluence with Green River to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Willow Creek and tributaries (Uintah County), from confluence with Green River to headwaters	2B	3A		4
[~~White River and tributaries, from confluence with Green River to state line, except as listed below~~	~~2B~~	~~3B~~		~~4~~
] White River and tributaries, from confluence with Green River to state line, except as listed below:	2B	3B		4
[~~Bitter Creek and Tributaries from White River to Headwaters~~	~~2B~~	~~3A~~		~~4~~
] Bitter Creek and tributaries from White River to headwaters	2B	3A		4
[~~Duchesne River and tributaries, from confluence with Green River to Myton Water Treatment Plant intake, except as listed below~~	~~2B~~	~~3B~~		~~4~~
] Duchesne River and tributaries, from confluence with Green River to Myton Water Treatment Plant intake, except as listed below	2B	3B		4

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[~~Uinta River and tributaries, From confluence with Duchesne River to Highway US-40 crossing~~	~~2B~~	~~3B~~	~~4~~]
Uinta River and tributaries from confluence with Duchesne River to U.S. Highway 40 crossing	2B	3B	4
[~~Uinta River and tributaries, From Highway US-4- crossing to headwaters~~	~~2B~~	~~3A~~	~~4~~]
Uinta River and tributaries, from U.S. Highway 40 crossing	2B	3A	4
[~~Power House Canal from Confluence with Uinta River to headwaters~~	~~2B~~	~~3A~~	~~4~~]
Power House Canal from confluence with Uinta River to headwaters	2B	3A	4
[~~Whiterocks River and Canal, From Tridell Water Treatment Plant to Headwaters~~	~~1C~~	~~2B~~	~~3A~~ ~~4~~]
Whiterocks River and Canal, from Tridell Water Treatment Plant to headwaters	1C	2B	3A 4
[~~Duchesne River and tributaries, from Myton Water Treatment Plant intake to headwaters~~	~~1C~~	~~2B~~	~~3A~~ ~~4~~]
Duchesne River and tributaries, from Myton Water Treatment Plant intake to headwaters	1C	2B	3A 4
[~~Lake Fork River and tributaries, from confluence with Duchesne River to headwaters~~	~~1C~~	~~2B~~	~~3A~~ ~~4~~]
Lake Fork River and tributaries, from confluence with Duchesne			

River to headwaters	1C	2B	3A	4
[~~Lake Fork Canal from Dry Gulch Canal Diversion to Moon Lake~~	~~1C~~	~~2B~~	~~3E~~	~~4~~
] Lake Fork Canal from Dry Gulch Canal Diversion to Moon Lake	1C	2B	3E	4
[~~Dry Gulch Canal, from Myton Water Treatment Plant to Lake Fork Canal~~	~~1C~~	~~2B~~	~~3E~~	~~4~~
] Dry Gulch Canal, from Myton Water Treatment Plant to Lake Fork Canal	1C	2B	3E	4
[~~Ashley Creek and tributaries, from confluence with Green River to Steinaker diversion~~		~~2B~~	~~3B~~	~~4~~
] Ashley Creek and tributaries, from confluence with Green River to Steinaker diversion		2B	3B	4
[~~Ashley Creek and tributaries, from Steinaker diversion to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Ashley Creek and tributaries, from Steinaker diversion to headwaters	1C	2B	3A	4
[~~Big Brush Creek and tributaries, from confluence with Green River to Tyzack (Red Fleet) Dam~~		~~2B~~	~~3B~~	~~4~~
] Big Brush Creek and tributaries from confluence with Green River to Tyzack (Red Fleet) Dam		2B	3B	4
[~~Big Brush Creek and tributaries, from Tyzack (Red Fleet) Dam to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
] Big Brush Creek and tributaries,				

from Tyzack (Red Fleet) Dam to headwaters	1C	2B	3A	4
~~[Jones Hole Creek and tributaries, from confluence with Green River to headwaters~~		~~2B~~	~~3A~~	
] Jones Hole Creek and tributaries from confluence with Green River to headwaters		2B	3A	
~~[Diamond Gulch Creek and tributaries, from confluence with Green River to headwaters~~		~~2B~~	~~3A~~	~~4~~
] Diamond Gulch Creek and tributaries, from confluence with Green River to headwaters		2B	3A	4
~~[Pot Creek and tributaries, from Crouse Reservoir to headwaters~~		~~2B~~	~~3A~~	~~4~~
] Pot Creek and tributaries, from Crouse Reservoir to headwaters		2B	3A	4
~~[Green River and tributaries, from Utah-Colorado state line to Flaming Gorge Dam except as listed below:~~	~~2A~~	~~3A~~	~~4~~	
]Green River and tributaries, from Utah-Colorado state line to Flaming Gorge Dam, except as listed below:	2A	3A	4	
~~[Sears Creek and tributaries, Daggett County~~		~~2B~~	~~3A~~	
] Sears Creek and tributaries, Daggett County		2B	3A	
~~[Tolivers Creek and tributaries, Daggett County~~		~~2B~~	~~3A~~	
] Tolivers Creek and tributaries, Daggett County		2B	3A	

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[~~Red Creek and tributaries, from confluence with Green River to state line~~] Red Creek and tributaries, from confluence with Green River to state line	2B	3C	4
[~~Jackson Creek and tributaries, Daggett County~~] Jackson Creek and tributaries, Daggett County	2B	3A	
[~~Davenport Creek and tributaries, Daggett County~~] Davenport Creek and tributaries, Daggett County	2B	3A	
[~~Goslin Creek and tributaries, Daggett County~~] Goslin Creek and tributaries, Daggett County	2B	3A	
[~~Gorge Creek and tributaries, Daggett County~~] Gorge Creek and tributaries, Daggett County	2B	3A	
[~~Beaver Creek and tributaries, Daggett County~~] Beaver Creek and tributaries, Daggett County	2B	3A	
[~~O-Wi-Yu-Kuts Creek and tributaries, Daggett County~~] O-Wi-Yu-Kuts Creek and tributaries, Daggett County	2B	3A	
Tributaries to Flaming Gorge Reservoir, except as listed below	2B	3A	4
[~~Birch Spring Draw and tributaries, from Flaming~~			

~~Gorge Reservoir to headwaters~~	~~2B~~	~~3C~~	~~4~~
] Birch Spring Draw and tributaries, from Flaming Gorge Reservoir to headwaters	2B	3C	4
[~~Spring Creek and tributaries, from Flaming Gorge Reservoir to headwaters~~	~~2B~~	~~3A~~	
] Spring Creek and tributaries, from Flaming Gorge Reservoir to headwaters	2B	3A	
[~~All Tributaries of Flaming Gorge Reservoir from Utah-Wyoming state line to headwaters~~	~~2B~~	~~3A~~	~~4~~
]All tributaries of Flaming Gorge Reservoir from Utah-Wyoming state line to headwaters	2B	3A	4

(*) Site-specific criteria are associated with this use.

13.2 Lower Colorado River Basin

a. Virgin River Drainage

TABLE

Beaver Dam Wash and tributaries, from Motoqua to headwaters	2B	3B	4
[~~Virgin River and tributaries from state line to Quail Creek diversion except as listed below~~	~~2B~~	~~3B~~	~~4~~
]Virgin River and tributaries, from state line to Quail Creek diversion, except as listed below:	2B	3B	4
Virgin River from the Utah-Arizona border to Pah Tempe Springs	2B	3B	4*
Virgin River from the Utah-Arizona border to Pah Tempe Springs	2B	3B	4*

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[~~Santa Clara River from confluence with Virgin River to Gunlock Reservoir~~	~~1C~~	~~2B~~	~~3B~~	~~4~~
]Santa Clara River from confluence with Virgin River to Gunlock Reservoir	1C	2B	3B	4
[~~Santa Clara River and tributaries, from Gunlock Reservoir to headwaters~~		~~2B~~	~~3A~~	~~4~~
]Santa Clara River and tributaries, from Gunlock Reservoir to headwaters		2B	3A	4
[~~Leed's Creek, from confluence with Quail Creek to headwaters~~		~~2B~~	~~3A~~	~~4~~
]Leeds Creek from confluence with Quail Creek to headwaters		2B	3A	4
[~~Quail Creek from Quail Creek Reservoir to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Quail Creek from Quail Creek Reservoir to headwaters	1C	2B	3A	4
[~~Ash Creek and tributaries, from confluence with Virgin River to Ash Creek Reservoir~~		~~2B~~	~~3A~~	~~4~~
]Ash Creek and tributaries, from confluence with Virgin River to Ash Creek Reservoir		2B	3A	4
[~~Ash Creek and tributaries, From Ash Creek Reservoir to headwaters~~		~~2B~~	~~3A~~	~~4~~
]Ash Creek and tributaries, from Ash Creek Reservoir to headwaters		2B	3A	4
[~~Virgin River and tributaries, from the Quail Creek diversion to headwaters, except as listed below~~	~~1C~~	~~2B~~	~~3C~~	~~4~~
]Virgin River and tributaries, from				

the Quail Creek diversion to headwaters, except as listed below:	1C	2B	3C	4
North Creek, from the confluence with Virgin River to headwaters	1C	2B	3C	4*
[~~North Fork Virgin River and tributaries~~	~~1C 2A~~	~~3A~~		~~4~~
] North Fork Virgin River and tributaries	1C 2A	3A		4
Kolob Creek, from confluence with Virgin River to headwaters		2B 3A		4
[~~East Fork Virgin River, from town of Glendale to headwaters~~		~~2B 3A~~		~~4~~
] East Fork Virgin River, from town of Glendale to headwaters		2B 3A		4
[~~Kolob Creek, from confluence with Virgin River to headwaters~~		~~2B 3A~~		~~4~~
]				

(*) Site-specific criteria are associated with this use.

b. Kanab Creek Drainage

TABLE

[~~Kanab Creek and tributaries, from state line to irrigation diversion at confluence with Reservoir Canyon~~	~~2B~~	~~3C~~	~~4~~
]Kanab Creek and tributaries, from state line to irrigation diversion at confluence with Reservoir Canyon	2B	3C	4
[~~Kanab Creek and tributaries, from irrigation diversion at confluence with Reservoir Canyon to headwaters~~		~~2B 3A~~	~~4~~
]Kanab Creek and tributaries, from			

irrigation diversion at confluence with Reservoir Canyon to headwaters	2B	3A		4
Johnson Wash and tributaries, from state line to confluence with Skutumpah Canyon	2B		3C	4
[~~Johnson Wash and tributaries, from confluence with Skutumpah Canyon to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Johnson Wash and tributaries, from confluence with Skutumpah Canyon to headwaters	2B	3A		4

13.3 Bear River Basin

a. Bear River Drainage

TABLE

Bear River and tributaries, from Great Salt Lake to Utah-Idaho border, except as listed below:	2B	3B	3D	4
[~~Perry Canyon Creek from U.S. Forest boundary to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Perry Canyon Creek from U.S. Forest boundary to headwaters	2B	3A		4
[~~Box Elder Creek from confluence with Black Slough to Brigham City Reservoir (the Mayor's Pond)~~	~~2B~~		~~3C~~	~~4~~
] Box Elder Creek from confluence with Black Slough to Brigham City Reservoir (Mayor's Pond)	2B		3C	4
[~~Box Elder Creek, from Brigham City Reservoir (the Mayor's Pond) to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Box Elder Creek, from Brigham City Reservoir (Mayor's Pond) to headwaters	2B	3A		4

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[~~Salt Creek, from confluence with Bear River to Crystal Hot Springs~~	~~2B~~	~~3B~~	~~3D~~	
] Salt Creek from confluence with Bear River to Crystal Hot Springs	2B	3B	3D	
[~~Malad River and tributaries, from confluence with Bear River to state line~~	~~2B~~	~~3C~~		
] Malad River and tributaries, from confluence with Bear River to state line	2B	3C		
[~~Little Bear River and tributaries, from Cutler Reservoir to headwaters~~	~~2B~~	~~3A~~	~~3D~~	~~4~~
] Little Bear River and tributaries, from Cutler Reservoir to headwaters, except as listed below:	2B	3A	3D	4
South Fork Spring Creek from confluence with Pelican Pond Slough Stream to U.S. Highway 89	2B	3A	3D	4*
[~~Logan River and tributaries, from Cutler Reservoir to headwaters~~	~~2B~~	~~3A~~	~~3D~~	~~4~~
] Logan River and tributaries, from Cutler Reservoir to headwaters	2B	3A	3D	4
[~~Blacksmith Fork and tributaries, from confluence with Logan River to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Blacksmith Fork and tributaries, from confluence with Logan River to headwaters	2B	3A		4
[~~Newton Creek and tributaries, from Cutler Reservoir to Newton Reservoir~~	~~2B~~	~~3A~~		~~4~~
] Newton Creek and tributaries, from Cutler Reservoir to Newton Reservoir	2B	3A		4

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[~~Clarkston Creek and tributaries, from Newton Reservoir to headwaters~~	~~2B~~	~~3A~~	~~4~~]
Clarkston Creek and tributaries, from Newton Reservoir to headwaters	2B	3A	4
[~~Birch Creek and tributaries, from confluence with Clarkston Creek to headwaters~~	~~2B~~	~~3A~~	~~4~~]
Birch Creek and tributaries, from confluence with Clarkston Creek to headwaters	2B	3A	4
[~~Summit Creek and tributaries, from confluence with Bear River to headwaters~~	~~2B~~	~~3A~~	~~4~~]
Summit Creek and tributaries, from confluence with Bear River to headwaters	2B	3A	4
[~~Cub River and tributaries, from confluence with Bear River to state line, except as listed below:~~	~~2B~~	~~3B~~	~~4~~]
Cub River and tributaries, from confluence with Bear River to state line, except as listed below:	2B	3B	4
[~~High Creek and tributaries, from confluence with Cub River to headwaters~~	~~2B~~	~~3A~~	~~4~~]
High Creek and tributaries from confluence with Cub River to headwaters	2B	3A	4
All tributaries to Bear Lake from Bear Lake to headwaters, except as listed below	2B	3A	4
Swan Springs tributary to Swan			

Creek	1C	2B 3A	
Bear River and tributaries in Rich County		2B 3A	4
Bear River and tributaries, from Utah-Wyoming state line to headwaters (Summit County)		2B 3A	4
Mill Creek and tributaries, from state line to headwaters (Summit County)		2B 3A	4

(*) Site-specific criteria are associated with this use.

13.4 Weber River Basin

a. Weber River Drainage

TABLE

Willard Creek, from Willard Bay Reservoir to headwaters		2B 3A	4
[~~Weber River, from Great Salt Lake to Slaterville diversion, except as listed below:~~		~~2B~~	~~3C 3D 4~~
]Weber River, from Great Salt Lake to Slaterville diversion, except as listed below:		2B	3C 3D 4
Four Mile Creek from Interstate[-]15 [~~T~~]to headwaters			2B 3A 4
Weber River and tributaries, from Slaterville diversion to Stoddard diversion, except as listed below		2B 3A	4
Ogden River and tributaries, [~~F~~]from confluence with Weber River [~~T~~]to Pineview Dam, except as listed			

[~~B~~]below[~~—~~]:			2A	3A 4
[~~Wheeler Creek from Confluence with Ogden River to headwaters~~	1C	2B	3A	~~4~~]
Wheeler Creek from confluence with Ogden River to headwaters	1C	2B	3A	4
[~~All tributaries to Pineview Reservoir~~	1C	2B	3A	~~4~~]
All tributaries to Pineview Reservoir	1C	2B	3A	4
Strongs Canyon Creek and [~~T~~]tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A	4
Burch Creek and tributaries, from Harrison Boulevard in Ogden to Headwaters	1C	2B	3A	
Spring Creek and tributaries, [~~F~~]from U.S. National Forest [~~B~~]boundary to headwaters		1C	2B	3A 4
[~~Weber River and tributaries, from Stoddard diversion to headwaters~~	1C	2B	3A	~~4~~]
Weber River and tributaries, from Stoddard diversion to headwaters	1C	2B	3A	4

13.5 Utah Lake-Jordan River Basin

a. Jordan River Drainage

TABLE

[~~Jordan River, from Farmington Bay to North Temple Street, Salt Lake City~~		~~2B~~	~~3B *~~	~~3D~~ ~~4~~

]Jordan River, from Farmington Bay to North Temple Street, Salt Lake City		2B	3B* 3D	4
[~~State Canal, from Farmington Bay to confluence with the Jordan River~~		~~2B~~	~~3B *~~ ~~3D~~	~~4~~
]State Canal, from Farmington Bay to confluence with the Jordan River		2B	3B* 3D	4
[~~Jordan River, from North Temple Street in Salt Lake City to confluence with Little Cottonwood Creek~~		~~2B~~	~~3B *~~	~~4~~
]Jordan River, from North Temple Street in Salt Lake City to confluence with Little Cottonwood Creek		2B	3B*	4
[~~Surplus Canal from Great Salt Lake to the diversion from the Jordan River~~		~~2B~~	~~3B *~~ ~~3D~~	~~4~~
]Surplus Canal from Great Salt Lake to the diversion from the Jordan River		2B	3B* 3D	4
[~~Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion~~		~~2B~~ ~~3A~~		~~4~~
]Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion		2B 3A		4
[~~Jordan River, from Narrows Diversion to Utah Lake~~	~~1C~~	~~2B~~	~~3B~~	~~4~~
]Jordan River, from Narrows Diversion to Utah Lake	1C	2B	3B	4
[~~City Creek, from Memory Park in Salt Lake City to City Creek Water Treatment Plant~~		~~2B~~ ~~3A~~		
]City Creek, from Memory Park in Salt Lake City to City Creek Water Treatment Plant		2B 3A		

City Creek, from City Creek Water Treatment Plant to headwaters	1C	2B 3A	
[~~Red Butte Creek and tributaries from Liberty Park pond inlet to Red Butte Reservoir~~]Red Butte Creek and tributaries, from Liberty Park pond inlet to Red Butte Reservoir		2B 3A	4
[~~Red Butte Creek and tributaries, from Red Butte Reservoir to headwaters~~]Red Butte Creek and tributaries, from Red Butte Reservoir to headwaters	1C	2B 3A	
[~~Emigration Creek and tributaries, from 1100 East in Salt Lake City to headwaters~~]Emigration Creek and tributaries, from 1100 East in Salt Lake City to headwaters		2B 3A	4
[~~Parley's Creek and tributaries, from 1300 East in Salt Lake City to Mountain Dell Reservoir~~]Parleys Creek and tributaries, from 1300 East in Salt Lake City to Mountain Dell Reservoir	1C	2B 3A	
[~~Parley's Creek and tributaries, from Mountain Dell Reservoir to headwaters~~]Parleys Creek and tributaries, from Mountain Dell Reservoir to headwaters	1C	2B 3A	
[~~Mill Creek (Salt Lake County) from confluence with Jordan River to Interstate Highway 15~~]Mill Creek (Salt Lake County) from confluence with Jordan River to Interstate 15		2B	3C 4

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[~~Mill Creek (Salt Lake County) and tributaries from Interstate Highway 15 to headwaters~~		~~2B 3A~~	~~4~~
]Mill Creek (Salt Lake County) and tributaries, from Interstate 15 to headwaters		2B 3A	4
[~~Big Cottonwood Creek and tributaries, from confluence with Jordan River to Big Cottonwood Water Treatment Plant~~		~~2B 3A~~	~~4~~
]Big Cottonwood Creek and tributaries, from confluence with Jordan River to Big Cottonwood Water Treatment Plant		2B 3A	4
[~~Big Cottonwood Creek and tributaries, from Big Cottonwood Water Treatment Plant to headwaters~~	~~1C~~	~~2B 3A~~	
]Big Cottonwood Creek and tributaries from Big Cottonwood Water Treatment Plant to headwaters	1C	2B 3A	
Deaf Smith Canyon Creek and tributaries	1C	2B 3A	4
[~~Little Cottonwood Creek and tributaries, from confluence with Jordan River to Metropolitan Water Treatment Plant~~		~~2B 3A~~	~~4~~
]Little Cottonwood Creek and tributaries, from confluence with Jordan River to Metropolitan Water Treatment Plant		2B 3A	4
Little Cottonwood Creek and tributaries, from Metropolitan Water Treatment Plant to headwaters	1C	2B 3A	
Bell<u>s</u> Canyon Creek and tributaries,			

from [~~l~~]Lower Bell[~~'~~]s Canyon [~~r~~]Reservoir to headwaters	1C	2B	3A
[~~Little Willow Creek and tributaries, from Draper Irrigation Company diversion to headwaters~~	~~1C~~	~~2B~~	~~3A~~
]Little Willow Creek and tributaries, from Draper Irrigation Company diversion to headwaters	1C	2B	3A
Big Willow Creek and tributaries, from Draper Irrigation Company diversion to headwaters	1C	2B	3A
South Fork of Dry Creek and tributaries, from Draper [ ]Irrigation Company diversion to headwaters	1C	2B	3A
[~~All permanent streams on east slope of Oquirrh Mountains (Coon, Barney's, Bingham, Butterfield, and Rose Creeks)~~	~~2B~~	~~3D~~	~~4~~
]All permanent streams on east slope of Oquirrh Mountains (Coon, Barneys, Bingham, Butterfield, and Rose Creeks)	2B	3D	4
Kersey Creek from confluence of C-7 Ditch to headwaters	2B	3D	

[~~* Site specific criteria for dissolved oxygen. See Table 2.14.5.~~](*) Site-specific criteria are associated with this use.

b. Provo River Drainage

TABLE

[~~Provo River and tributaries, from Utah Lake to Murdock diversion~~	~~2B~~	~~3A~~	~~4~~

]Provo River and tributaries, from Utah Lake to Murdock Diversion		2B 3A	4
[~~Provo River and tributaries, from Murdock Diversion to headwaters, except as listed below~~	1C	~~2B 3A~~	~~4~~
]Provo River and tributaries, from Murdock Diversion to headwaters, except as listed below:	1C	2B 3A	4
Upper Falls drainage above Provo City diversion	1C	2B 3A	
Bridal Veil Falls drainage above Provo City diversion	1C	2B 3A	
Lost Creek and tributaries above Provo City diversion	1C	2B 3A	

c. Utah Lake Drainage

TABLE

[~~Dry Creek and tributaries (above Alpine), from U.S. National Forest boundary to headwaters~~		~~2B 3A~~	~~4~~
]Dry Creek and tributaries (above Alpine), from U.S. National Forest boundary to headwaters		2B 3A	4
[~~American Fork Creek and tributaries, from diversion at mouth of American Fork Canyon to headwaters~~		~~2B 3A~~	~~4~~
]American Fork Creek and tributaries, from diversion at mouth of American Fork Canyon to headwaters		2B 3A	4
[~~Spring Creek and tributaries, from Utah Lake near Lehi to headwaters~~		~~2B 3A~~	~~4~~
]Spring Creek and tributaries, from Utah Lake near Lehi to headwaters		2B 3A	4

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[~~Lindon Hollow Creek and tributaries, from Utah Lake to headwaters~~		~~2B~~	~~3B~~	~~4~~
]Lindon Hollow Creek and tributaries, from Utah Lake to headwaters		2B	3B	4
Grove Creek from Murdock Diversion to headwaters	1C	2B	3A	
Battle Creek from Murdock Diversion to Headwaters	1C	2B	3A	
[~~Rock Canyon Creek and tributaries (East of Provo) from U.S. National Forest boundary to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Rock Canyon Creek and tributaries (East of Provo), from U.S. National Forest boundary to headwaters	1C	2B	3A	4
Mill Race (except from Interstate [~~Highway~~]15 to the Provo City WWTP discharge) and tributaries, from Utah Lake to headwaters		2B	3B	4
Mill Race from Interstate 15[~~Highway~~] [~~15~~]to the Provo City wastewater treatment plant discharge		2B	3B	4
[~~Spring Creek and tributaries from Utah Lake (Provo Bay) to 50 feet upstream from the east boundary of the Industrial Parkway Road Right-of-way~~		~~2B~~	~~3B~~	~~4~~
]Spring Creek and tributaries, from Utah Lake (Provo Bay) to 50 feet upstream from the east boundary of the Industrial Parkway Road Right-of-way		2B	3B	4
[~~Tributary to Spring Creek (Utah~~				

~~County) which receives the Springville City WWTP effluent from confluence with Spring Creek to headwaters~~	~~2B~~	~~3D~~	~~4~~
]Tributary to Spring Creek (Utah County) which receives the Springville City WWTP effluent from confluence with Spring Creek to headwaters	2B	3D	4
[~~Spring Creek and tributaries from 50 feet upstream from the east boundary of the Industrial Parkway Road right-of-way to the headwaters~~	~~2B~~	~~3A~~	~~4~~
]Spring Creek and tributaries from 50 feet upstream from the east boundary of the Industrial Parkway Road right-of-way to the headwaters	2B	3A	4
Ironton Canal from Utah Lake (Provo Bay) to the east boundary of the Denver and Rio Grande Western Railroad right-of-way	2B	3C	4
[~~Ironton Canal from the east boundary of the Denver and Rio Grande Western Railroad right-of-way to the point of diversion from Spring Creek~~	~~2B~~	~~3A~~	~~4~~
]Ironton Canal from the east boundary of the Denver and Rio Grande Western Railroad right-of-way to the point of diversion from Spring Creek	2B	3A	4
[~~Hobble Creek and tributaries, from Utah Lake to headwaters~~	~~2B~~	~~3A~~	~~4~~
]Hobble Creek and tributaries, from Utah Lake to headwaters	2B	3A	4
[~~Dry Creek and tributaries from Utah Lake (Provo Bay) to Highway-US 89~~	~~2B~~	~~3E~~	~~4~~

]Dry Creek and tributaries, from Utah Lake (Provo Bay) to U.S. Highway 89	2B			3E 4
[~~Dry Creek and tributaries from Highway-US 89 to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Dry Creek and tributaries, from U.S. Highway 89 to headwaters	2B	3A		4
[~~Spanish Fork River and tributaries, from Utah Lake to diversion at Moark Junction~~	~~2B~~	~~3B~~	~~3D~~	~~4~~
]Spanish Fork River and tributaries, from Utah Lake to diversion at Moark Junction	2B	3B	3D	4
[~~Spanish Fork River and tributaries, from diversion at Moark Junction to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Spanish Fork River and tributaries, from diversion at Moark Junction to headwaters	2B	3A		4
Benjamin Slough and tributaries, from Utah Lake to headwaters, except as listed below	2B	3B		4
[~~Beer Creek (Utah County) from 4850 West (in NE1/4NE1/4 sec. 36, T.8 S., R.1 E.) to headwaters~~	~~2B~~		~~3C~~	~~4~~
] Beer Creek (Utah County) from 4850 West (in NE1/4NE1/4 sec. 36, T.8.S., R.1.E.) to headwaters	2B		3C	4
[~~Salt Creek, from Nephi diversion to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Salt Creek from Nephi diversion to headwaters	2B	3A		4
[~~Currant Creek, from mouth~~				

~~of Goshen Canyon to Mona Reservoir~~	~~2B~~	~~3A~~	~~4~~
]Currant Creek from mouth of Goshen Canyon to Mona Reservoir	2B	3A	4
[~~Currant Creek, from Mona Reservoir to headwaters~~	~~2B~~	~~3A~~	~~4~~
]Currant Creek from Mona Reservoir to headwaters	2B	3A	4
[~~Peteetneet Creek and tributaries, from irrigation diversion above Maple Dell to headwaters~~	~~2B~~	~~3A~~	~~4~~
]Peteetneet Creek and tributaries, from irrigation diversion above Maple Dell to headwaters	2B	3A	4
[~~Summit Creek and tributaries (above Santaquin), from U.S. National Forest boundary to headwaters~~	~~2B~~	~~3A~~	~~4~~
]Summit Creek and tributaries (above Santaquin), from U.S. National Forest boundary to headwaters	2B	3A	4
[~~All other permanent streams entering Utah Lake~~	~~2B~~	~~3B~~	~~4~~
]All other permanent streams entering Utah Lake	2B	3B	4

13.6 Sevier River Basin

a. Sevier River Drainage

TABLE

[~~Sevier River and tributaries from Sevier Lake to Gunnison Bend Reservoir to U.S.National Forest boundary except as listed below~~	~~2B~~	~~3C~~	~~4~~
]Sevier River and tributaries, from Sevier Lake to Gunnison Bend			

Reservoir to U.S. National Forest boundary, except as listed below:	2B	3C	4
Sevier River from Gunnison Bend Reservoir to Clear Lake	2B	3C	4*
[~~Beaver River and tributaries from Minersville City to headwaters~~	~~2B~~	~~3A~~	~~4~~
] Beaver River and tributaries, from Minersville City to headwaters	2B	3A	4
[~~Little Creek and tributaries, From irrigation diversion to Headwaters~~	~~2B~~	~~3A~~	~~4~~
] Little Creek and tributaries, from irrigation diversion to headwaters	2B	3A	4
[~~Pinto Creek and tributaries, From Newcastle Reservoir to Headwaters~~	~~2B~~	~~3A~~	~~4~~
] Pinto Creek and tributaries, from Newcastle Reservoir to headwaters	2B	3A	4
Coal Creek and tributaries	2B	3A	4
Summit Creek and tributaries	2B	3A	4
Parowan Creek and tributaries	2B	3A	4
[~~Tributaries to Sevier River from Sevier Lake to Gunnison Bend Reservoir from U.S. National Forest boundary to headwaters, including:~~	~~2B~~	~~3A~~	~~4~~
]Tributaries to Sevier River from Sevier Lake to Gunnison Bend Reservoir from U.S. National Forest boundary to headwaters, including:	2B	3A	4
[—] Pioneer Creek and tributaries, [-] Millard County	2B	3A	4

[–] [-] Chalk Creek and tributaries, Millard County_	2B	3A	4
[–] [-] Meadow Creek and tributaries, Millard County_	2B	3A	4
[–] [-] Corn Creek and tributaries, Millard County_	2B	3A	4
Sevier River and tributaries, below U.S. National Forest boundary from Gunnison Bend Reservoir to Annabella Diversion, except as listed below	2B	3B	4
Sevier River between Gunnison Bend Reservoir and DMAD Reservoir	2B	3B	4*
[~~Oak Creek and tributaries, Millard County~~] Oak Creek and tributaries Millard County	2B	3A	4
[~~Round Valley Creek and tributaries, Millard County~~] Round Valley Creek and tributaries, Millard County	2B	3A	4
[~~Judd Creek and tributaries, Juab County~~] Judd Creek and tributaries, Juab County	2B	3A	4
[~~Meadow Creek and tributaries, Juab County~~] Meadow Creek and tributaries, Juab County	2B	3A	4
[~~Cherry Creek and tributaries Juab County~~] Cherry Creek and tributaries, Juab			

County	2B	3A		4
[~~Tanner Creek and tributaries, Juab County~~	~~2B~~		~~3E~~	~~4~~
] Tanner Creek and tributaries, Juab County	2B		3E	4
Baker Hot Springs, Juab County	2B		3D	4
[~~Chicken Creek and tributaries, Juab County~~	~~2B~~	~~3A~~		~~4~~
] Chicken Creek and tributaries, Juab County	2B	3A		4
[~~San Pitch River and tributaries, from confluence with Sevier River to Highway U-132 crossing except As listed below:~~	~~2B~~	~~3C~~	~~3D~~	~~4~~
] San Pitch River and tributaries, from confluence with Sevier River to Highway U-132 crossing, except as listed below:	2B	3C	3D	4
San Pitch River from below Gunnison Reservoir to the Sevier River	2B	3C	3D	4*
[~~Twelve Mile Creek (South Creek) and tributaries, from U.S. Forest Service boundary to headwaters~~	~~2B~~	~~3A~~		~~4~~
] Twelve Mile Creek (South Creek) and tributaries, from U.S. National Forest boundary to headwaters	2B	3A		4
Six Mile Creek and tributaries, Sanpete County	2B	3A		4
[~~Manti Creek (South Creek) and tributaries, from U.S.~~				

~~Forest Service boundary to headwaters~~	~~2B~~	~~3A~~	~~4~~
] Manti Creek (South Creek) and tributaries, from U.S. National Forest boundary to headwaters	2B	3A	4
[~~Ephraim Creek (Cottonwood Creek) and tributaries, from U.S. Forest Service to headwaters~~	~~2B~~	~~3A~~	~~4~~
] Ephraim Creek (Cottonwood Creek) and tributaries, from U.S. National Forest to headwaters	2B	3A	4
[~~Oak Creek and tributaries, from U.S. Forest Service boundary near Spring City to headwaters~~	~~2B~~	~~3A~~	~~4~~
] Oak Creek and tributaries, from U.S. National Forest boundary near Spring City to headwaters	2B	3A	4
[~~Fountain Green Creek and tributaries, from U.S. Forest Service boundary to headwaters~~	~~2B~~	~~3A~~	~~4~~
] Fountain Green Creek and tributaries, from U.S. National Forest boundary to headwaters	2B	3A	4
[~~San Pitch River and tributaries, from Highway U-132 crossing to headwaters~~	~~2B~~	~~3A~~	~~4~~
] San Pitch River and tributaries, from Highway U-132 crossing to headwaters	2B	3A	4
Lost Creek from the confluence with Sevier River to U.S. National Forest boundary	2B	3C 3D	4*
Brine Creek-Petersen Creek from			

the confluence with the Sevier River to Highway U-119 Crossing	2B		3C 3D	4*
[~~Tributaries to Sevier River from Gunnison Bend Reservoir to Annabelle Diversion from U.S. National Forest boundary to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Tributaries to Sevier River from Gunnison Bend Reservoir to Annabella diversion from U.S. National Forest boundary to headwaters	2B	3A		4
[~~Sevier River and tributaries, from Annabella diversion to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Sevier River and tributaries, from Annabella diversion to headwaters	2B	3A		4
[~~Monroe Creek and tributaries, from diversion to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Monroe Creek and tributaries, from diversion to headwaters	2B	3A		4
[~~Little Creek and tributaries, from irrigation diversion to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Little Creek and tributaries, from irrigation diversion to headwaters	2B	3A		4
[~~Pinto Creek and tributaries, from Newcastle Reservoir to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Pinto Creek and tributaries, from Newcastle Reservoir to headwaters	2B	3A		4
Coal Creek and tributaries	2B	3A		4
Summit Creek and tributaries	2B	3A		4
Parowan Creek and tributaries	2B	3A		4

Duck Creek and tributaries	1C	2B 3A	4

(*) Site-specific criteria are associated with this use.

13.7 Great Salt Lake Basin

a. Western Great Salt Lake Drainage

TABLE

Grouse Creek and tributaries, Box Elder County		2B 3A	4
Muddy Creek and tributaries, Box Elder County		2B 3A	4
Dove Creek and tributaries, Box Elder County		2B 3A	4
Pine Creek and tributaries, Box Elder County		2B 3A	4
Rock Creek and tributaries, Box Elder County		2B 3A	4
Fisher Creek and tributaries, Box Elder County		2B 3A	4
Dunn Creek and tributaries, Box Elder County		2B 3A	4
[~~Indian Creek and tributaries, Box Elder County~~		~~2B 3A~~	~~4~~]
Indian Creek and tributaries, Box Elder County		2B 3A	4
[~~Tenmile Creek and tributaries, Box Elder County~~		~~2B 3A~~	~~4~~]
Tenmile Creek and tributaries, Box Elder County		2B 3A	4
[~~Curlew (Deep) Creek, Box Elder County~~		~~2B 3A~~	~~4~~]
Curlew (Deep) Creek, Box Elder County		2B 3A	4

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[~~Blue Creek and tributaries, from Great Salt Lake to Blue Creek Reservoir~~		~~2B~~	~~3D~~	~~4~~
]Blue Creek and tributaries, Box Elder County, from Bear River Bay, Great Salt Lake to Blue Creek Reservoir		2B	3D	4*
[~~Blue Creek and tributaries, from Blue Creek Reservoir to headwaters~~		~~2B~~	~~3B~~	~~4~~
]Blue Creek and tributaries from Blue Creek Reservoir to headwaters		2B	3B	4*
[~~All perennial streams on the east slope of the Pilot Mountain Range~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]All perennial streams on the east slope of the Pilot Mountain Range	1C	2B	3A	4
[~~Donner Creek and tributaries, from irrigation diversion to Utah-Nevada state line~~		~~2B~~	~~3A~~	~~4~~
]Donner Creek and tributaries, from irrigation diverion to Utah-Nevada state line		2B	3A	4
[~~Bettridge Creek and tributaries, from irrigation diversion to Utah-Nevada state line~~		~~2B~~	~~3A~~	~~4~~
]Bettridge Creek and tributaries, from irrigation diverion to Utah-Nevada state line		2B	3A	4
[~~North Willow Creek and tributaries, Tooele County~~		~~2B~~	~~3A~~	~~4~~
]North Willow Creek and tributaries, Tooele County		2B	3A	4
[~~South Willow Creek and tributaries, Tooele County~~		~~2B~~	~~3A~~	~~4~~
]South Willow Creek and tributaries, Tooele County		2B	3A	4

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Hickman Creek and tributaries, Tooele County		2B 3A	4
Barlow Creek and tributaries, Tooele County		2B 3A	4
Clover Creek and tributaries, Tooele County		2B 3A	4
Faust Creek and tributaries, Tooele County		2B 3A	4
Vernon Creek and tributaries, Tooele County		2B 3A	4
Ophir Creek and tributaries, Tooele County		2B 3A	4
[~~Soldier Creek and Tributaries from the Drinking Water Treatment Facility Headwaters, Tooele County~~	~~1C~~	~~2B 3A~~	~~4~~
]Soldier Creek and tributaries, from the Drinking Water Treamtent Facility to headwaters, Tooele County	1C	2B 3A	4
Settlement Canyon Creek and tributaries, Tooele County		2B 3A	4
[~~Middle Canyon Creek and tributaries, Tooele County~~		~~2B 3A~~	~~4~~
]Middle Canyon Creek and tributaries, Tooele County		2B 3A	4
Tank Wash and tributaries, Tooele County		2B 3A	4
Basin Creek and tributaries, Juab and Tooele Counties		2B 3A	4
Thomas Creek and tributaries,			

Juab County	2B	3A	4
[~~Indian Farm Creek and tributaries, Juab County~~	~~2B~~	~~3A~~	~~4~~
]Indian Farm Creek and tributaries, Juab County	2B	3A	4
[~~Cottonwood Creek and tributaries, Juab County~~	~~2B~~	~~3A~~	~~4~~
]Cottonwood Creek and tributaries, Juab County	2B	3A	4
Red Cedar Creek and tributaries, Juab County	2B	3A	4
Granite Creek and tributaries, Juab County	2B	3A	4
Trout Creek and tributaries, Juab County	2B	3A	4
Birch Creek and tributaries, Juab County	2B	3A	4
[~~Deep Creek and tributaries, from Rock Spring Creek to headwaters, Juab and Tooele Counties~~	~~2B~~	~~3A~~	~~4~~
]Deep Creek and tributaries, from Rock Spring Creek to headwaters, Juab and Tooele Counties	2B	3A	4
Cold Spring, Juab County	2B	3C	3D
Cane Spring, Juab County	2B	3C	3D
[~~Lake Creek, from Garrison (Pruess) Reservoir to Nevada state line~~	~~2B~~	~~3A~~	~~4~~
]Lake Creek, from Garrison (Pruess) Reservoir to Nevada state line	2B	3A	4

Snake Creek and tributaries, Millard County	2B	3B		4
Salt Marsh Spring Complex, Millard County	2B	3A		
Twin Springs, Millard County	2B	3B		
Tule Spring, Millard County	2B		3C 3D	
Coyote Spring Complex, Millard County	2B		3C 3D	
[~~Hamblin Valley Wash and tributaries, from Nevada state line to headwaters (Beaver and Iron Counties)~~	~~2B~~		~~3D~~	~~4~~
]Hamblin Valley Wash and tributaries, from Nevada state line to headwaters (Beaver and Iron Counties)	2B		3D	4
[~~Indian Creek and tributaries, Beaver County, from Indian Creek Reservoir to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Indian Creek and tributaries, Beaver County, from Indian Creek Reservoir to headwaters	2B	3A		4
Shoal Creek and tributaries, Iron County	2B	3A		4

(*) Site-specific criteria are associated with this use.

b. Farmington Bay Drainage

TABLE

[~~Corbett Creek and tributaries, from Highway to headwaters~~	~~2B~~	~~3A~~		~~4~~
]Corbett Creek and tributaries, from Highway to headwaters	2B	3A		4

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[~~Kays Creek and tributaries, from Farmington Bay to U.S. National Forest boundary~~		~~2B~~		~~3B~~	~~4~~
]Kays Creek and tributaries, from Farmington Bay to U.S. National Forest boundary		2B		3B	4
North Fork Kays Creek and tributaries, from U.S. National Forest boundary to headwaters		2B	3A		4
Middle Fork Kays Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A		4
South Fork Kays Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A		4
Snow Creek and tributaries		2B		3C	4
[~~Holmes Creek and tributaries, from Farmington Bay to U.S. National Forest boundary~~		~~2B~~		~~3B~~	~~4~~
]Holmes Creek and tributaries, from Farmington Bay to U.S. National Forest boundary		2B		3B	4
Holmes Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A		4
[~~Baer Creek and tributaries, from Farmington Bay to Interstate Highway 15~~		~~2B~~		~~3C~~	~~4~~
]Baer Creek and tributaries, from Farmington Bay to Interstate 15		2B		3B	4
[~~Baer Creek and tributaries, from Interstate Highway 15 to Highway US-89~~		~~2B~~		~~3B~~	~~4~~
]Baer Creek and tributaries, from					

Interstate 15 to U.S. Highway 89		2B	3B	4
Baer Creek and tributaries, from U.S. Highway [~~US-~~]89 to headwaters [~~---~~]			1C	2B 3A 4
[~~Shepard Creek and tributaries, from U.S. National Forest boundary to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~]
Shepard Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A	4
Farmington Creek and tributaries, from Farmington Bay Waterfowl Management Area to U.S. National Forest boundary		2B	3B	4
Farmington Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A	4
[~~Rudd Creek and tributaries, from Davis aqueduct to headwaters~~		~~2B~~	~~3A~~	~~4~~]
Rudd Creek and tributaries, from Davis aqueduct to headwaters		2B	3A	4
[~~Steed Creek and tributaries, from U.S. National Forest boundary to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~]
Steed Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A	4
[~~Davis Creek and tributaries, from Highway US-89 to headwaters~~		~~2B~~	~~3A~~	~~4~~]
Davis Creek and tributaries, from U.S. Highway 89 to headwaters		2B	3A	4
Lone Pine Creek and tributaries, from U.S. Highway [~~US-~~]89 to headwaters [~~---~~]				2B 3A 4

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Ricks Creek and tributaries, from [Highway I-]Interstate 15 to headwaters[—]	1C	2B 3A	4
[~~Barnard Creek and tributaries, from Highway US-89 to headwaters~~] Barnard Creek and tributaries, from U.S. Highway 89 to headwaters		2B 3A	4
[~~Parrish Creek and tributaries, from Davis Aqueduct to headwaters~~]Parrish Creek and tributaries, from Davis Aqueduct to headwaters		2B 3A	4
[~~Deuel Creek and tributaries, (Centerville Canyon) from Davis Aqueduct to headwaters~~]Deuel Creek and tributaries, (Centerville Canyon) from Davis Aqueduct to headwaters		2B 3A	4
[~~Stone Creek and tributaries, from Farmington Bay Waterfowl Management Area to U.S. National Forest boundary~~]Stone Creek and tributaries, from Farmington Bay Waterfowl Management Area to U.S. National Forest Boundary		2B 3A	4
[~~Stone Creek and tributaries, from U.S. National Forest boundary to headwaters~~]Stone Creek and tributaries, from U.S. National Forest boundary to headwaters	1C	2B 3A	4
[~~Barton Creek and tributaries, from U.S. National Forest boundary to headwaters~~]Barton Creek and tributaries, from U.S. National Forest boundary to headwaters		2B 3A	4

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[~~Mill Creek (Davis County) and tributaries, from confluence with State Canal to U.S. National Forest boundary~~		~~2B~~	~~3B~~	~~4~~
]Mill Creek (Davis County) and tributaries, from confluence with State Canal to U.S. National Forest boundary		2B	3B	4
[~~Mill Creek (Davis County) and tributaries, from U.S. National Forest boundary to headwaters~~	~~1C~~	~~2B~~	~~3A~~	~~4~~
]Mill Creek (Davis County) and tributaries, from U.S. National Forest boundary to headwaters	1C	2B	3A	4
[~~North Canyon Creek and tributaries, from U.S. National Forest boundary to headwaters~~		~~2B~~	~~3A~~	~~4~~
]North Canyon Creek and tributaries from U.S. National Forest boundary to headwaters		2B	3A	4
Howard Slough		2B	3C	4
Hooper Slough		2B	3C	4
Willard Slough		2B	3C	4
Willard Creek to Headwaters	1C	2B	3A	4
Chicken Creek to Headwaters	1C	2B	3A	4
Cold Water Creek to Headwaters	1C	2B	3A	4
One House Creek to Headwaters	1C	2B	3A	4
Garner Creek to Headwaters	1C	2B	3A	4

13.8 Snake River Basin

ATTACHMENT 5

a. Raft River Drainage (Box Elder County)

TABLE

Raft River and tributaries	2B 3A	4
[~~Clear Creek and tributaries, from Utah-Idaho state line to headwaters~~	~~2B 3A~~	~~4~~
]Clear Creek and tributaries, from Utah-Idaho state line to headwaters	2B 3A	4
[~~Onemile Creek and tributaries, from Utah-Idaho state line to headwaters~~	~~2B 3A~~	~~4~~
]Onemile Creek and tributaries, from Utah-Idaho state line to headwaters	2B 3A	4
[~~George Creek and tributaries, from Utah-Idaho state line to headwaters~~	~~2B 3A~~	~~4~~
]George Creek and tributaries, from Utah-Idaho state line to headwaters	2B 3A	4
[~~Johnson Creek and tributaries, from Utah-Idaho state line to headwaters~~	~~2B 3A~~	~~4~~
]Johnson Creek and tributaries, from Utah-Idaho state line to headwaters	2B 3A	4
[~~Birch Creek and tributaries, from state line to headwaters~~	~~2B 3A~~	~~4~~
]Birch Creek and tributaries, from state line to headwaters	2B 3A	4
[~~Pole Creek and tributaries, from state line to headwaters~~	~~2B 3A~~	~~4~~
]Pole Creek and tributaries, from state line to headwaters	2B 3A	4
Goose Creek and tributaries	2B 3A	4

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[~~Hardesty Creek and tributaries, from state line to headwaters~~	~~2B~~	~~3A~~		~~4~~]
Hardesty Creek and tributaries, from state line to headwaters	2B	3A		4
Meadow Creek and tributaries, from state line to headwaters	2B	3A		4

13.9 All irrigation canals and ditches statewide, except as otherwise designated: 2B, 3E, 4

13.10 All drainage canals and ditches statewide, except as otherwise designated: 2B, 3E

13.11 National Wildlife Refuges and State Waterfowl Management Areas, and other Areas Associated with the Great Salt Lake

TABLE

Bear River National Wildlife Refuge, Box Elder County	2B	3B	3D	
Bear River Bay				
Open Water below approximately 4,208 ft.				5C
Transitional Waters approximately 4,208 ft. to Open Water				5E
Open Water above approximately 4,208 ft.	2B	3B	3D	
Brown[~~'~~]s Park Waterfowl Management Area, Daggett County	2B	3A	3D	
Clear Lake Waterfowl Management Area, Millard County	2B	3C	3D	
Desert Lake Waterfowl Management Area, Emery County	2B	3C	3D	
Farmington Bay Waterfowl Management Area, Davis and Salt Lake Counties	2B	3C	3D	

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Farmington Bay				
Open Water below approximately 4,208 ft.				5D
Transitional Waters approximately 4,208 ft. to Open Water				5E
Open Water above approximately 4,208 ft.	2B	3B	3D	
Fish Springs National Wildlife Refuge, Juab County	2B	3C	3D	
Harold Crane Waterfowl Management Area, Box Elder County	2B	3C	3D	
Gilbert Bay				
Open Water below approximately 4,208 ft.				5A
Transitional Waters approximately 4,208 ft. to Open Water				5E
Open Water above approximately 4,208 ft.	2B	3B	3D	
Gunnison Bay				
Open Water below approximately 4,208 ft.				5B
Transitional Waters approximately 4,208 ft. to Open Water				5E
Open Water above approximately 4,208 ft.	2B	3B	3D	
Howard Slough Waterfowl Management Area, Weber County	2B	3C	3D	
Locomotive Springs Waterfowl Management Area, Box Elder County	2B	3B	3D	
Ogden Bay Waterfowl Management Area, Weber County	2B	3C	3D	

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Ouray National Wildlife Refuge, Uintah County	2B	3B	3D	
Powell Slough Waterfowl Management Area, Utah County	2B		3C	3D
Public Shooting Grounds Waterfowl Management Area, Box Elder County	2B		3C	3D
Salt Creek Waterfowl Management Area, Box Elder County	2B		3C	3D
Stewart Lake Waterfowl Management Area, Uintah County	2B	3B	3D	
Timpie Springs Waterfowl Management Area, Tooele County	2B	3B	3D	

13.12 Lakes and Reservoirs. All lakes and any reservoirs greater than 10 acres not listed in 13.12 are assigned by default to the classification of the stream with which they are associated.

a. Beaver County

TABLE

Anderson Meadow Reservoir	2B	3A		4
Manderfield Reservoir	2B	3A		4
LaBaron Reservoir	2B	3A		4
Kent[']s Lake			2B	3A 4
Minersville Reservoir	2B	3A	3D	4
Puffer Lake	2B	3A		
Three Creeks Reservoir	2B	3A		4

b. Box Elder County

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TABLE

Cutler Reservoir (including portion in Cache County)			2B	3B 3D	4
Etna Reservoir			2B	3A	4
Lynn Reservoir			2B	3A	4
Mantua Reservoir			2B	3A	4
Willard Bay Reservoir		1C	2A	3B 3D	4

c. Cache County

TABLE

Hyrum Reservoir			2A	3A	4
Newton Reservoir			2B	3A	4
Porcupine Reservoir			2B	3A	4
Pelican Pond			2B	3B	4
Tony Grove Lake			2B	3A	4

d. Carbon County

TABLE

Grassy Trail Creek Reservoir		1C	2B	3A	4
Olsen Pond			2B	3B	4
Scofield Reservoir		1C	2B	3A	4

e. Daggett County

TABLE

Browne Reservoir		2B	3A	4
Daggett Lake		2B	3A	4
Flaming Gorge Reservoir (Utah portion)	1C	2A	3A	4
Long Park Reservoir	1C	2B	3A	4
Sheep Creek Reservoir		2B	3A	4
Spirit Lake		2B	3A	4
Upper Potter Lake		2B	3A	4

f. Davis County

TABLE

Farmington Ponds		2B	3A	4
Kaysville Highway Ponds		2B	3A	4
Holmes Creek Reservoir		2B	3B	4

g. Duchesne County

TABLE

Allred Lake		2B	3A	4
Atwine Lake		2B	3A	4
Atwood Lake		2B	3A	4
Betsy Lake		2B	3A	4
Big Sandwash Reservoir	1C	2B	3A	4
Bluebell Lake		2B	3A	4
Brown Duck Reservoir		2B	3A	4

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Butterfly Lake	2B 3A	4
Cedarview Reservoir	2B 3A	4
Chain Lake #1	2B 3A	4
Chepeta Lake	2B 3A	4
Clements Reservoir	2B 3A	4
Cleveland Lake	2B 3A	4
Cliff Lake	2B 3A	4
Continent Lake	2B 3A	4
Crater Lake	2B 3A	4
Crescent Lake	2B 3A	4
Daynes Lake	2B 3A	4
Dean Lake	2B 3A	4
Doll Lake	2B 3A	4
Drift Lake	2B 3A	4
Elbow Lake	2B 3A	4
Farmer[']s Lake		2B 3A 4
Fern Lake	2B 3A	4
Fish Hatchery Lake	2B 3A	4
Five Point Reservoir	2B 3A	4
Fox Lake Reservoir	2B 3A	4

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Governor[']s Lake			2B 3A	4
Granddaddy Lake		2B 3A		4
Hoover Lake		2B 3A		4
Island Lake		2B 3A		4
Jean Lake		2B 3A		4
Jordan Lake		2B 3A		4
Kidney Lake		2B 3A		4
Kidney Lake West		2B 3A		4
Lily Lake		2B 3A		4
Midview Reservoir (Lake Boreham)		2B	3B	4
Milk Reservoir		2B 3A		4
Mirror Lake		2B 3A		4
Mohawk Lake		2B 3A		4
Moon Lake	1C 2A		3A	4
North Star Lake		2B 3A		4
Palisade Lake		2B 3A		4
Pine Island Lake		2B 3A		4
Pinto Lake		2B 3A		4
Pole Creek Lake		2B 3A		4
Potter[']s Lake			2B 3A	4

Powell Lake			2B 3A	4
Pyramid Lake		2A	3A	4
Queant Lake			2B 3A	4
Rainbow Lake			2B 3A	4
Red Creek Reservoir			2B 3A	4
Rudolph Lake			2B 3A	4
Scout Lake		2A	3A	4
Spider Lake			2B 3A	4
Spirit Lake			2B 3A	4
Starvation Reservoir	1C	2A	3A	4
Superior Lake			2B 3A	4
Swasey Hole Reservoir			2B 3A	4
Taylor Lake			2B 3A	4
Thompson Lake			2B 3A	4
Timothy Reservoir #1			2B 3A	4
Timothy Reservoir #6			2B 3A	4
Timothy Reservoir #7			2B 3A	4
Twin Pots Reservoir	1C		2B 3A	4
Upper Stillwater Reservoir	1C		2B 3A	4
X - 24 Lake			2B 3A	4

h. Emery County

ATTACHMENT 5

TABLE

Cleveland Reservoir		2B	3A	4
Electric Lake		2B	3A	4
Huntington Reservoir		2B	3A	4
Huntington North Reservoir	2A		3B	4
Joe[']s Valley Reservoir			2A	3A 4
Millsite Reservoir	1C	2A	3A	4

i. Garfield County

TABLE

Barney Lake		2B	3A	4
Cyclone Lake		2B	3A	4
Deer Lake		2B	3A	4
Jacob[']s Valley Reservoir			2B	3C 3D 4
Lower Bowns Reservoir		2B	3A	4
North Creek Reservoir		2B	3A	4
Panguitch Lake		2B	3A	4
Pine Lake		2B	3A	4
Oak Creek Reservoir (Upper Bowns)		2B	3A	4
Pleasant Lake		2B	3A	4
Posey Lake		2B	3A	4

Purple Lake	2B	3A		4
Raft Lake	2B	3A		4
Row Lake #3	2B	3A		4
Row Lake #7	2B	3A		4
Spectacle Reservoir	2B	3A		4
Tropic Reservoir	2B	3A		4
West Deer Lake	2B	3A		4
Wide Hollow Reservoir	2B	3A		4

j. Iron County

TABLE

Newcastle Reservoir	2B	3A		4
Red Creek Reservoir	2B	3A		4
Yankee Meadow Reservoir	2B	3A		4

k. Juab County

TABLE

Chicken Creek Reservoir	2B		3C 3D	4
Mona Reservoir	2B	3B		4
Sevier Bridge (Yuba) Reservoir	2A	3B		4

l. Kane County

TABLE

Navajo Lake	2B	3A		4

ATTACHMENT 5

m. Millard County

TABLE

DMAD Reservoir		2B	3B	4
Fools Creek Reservoir		2B	3C 3D	4
Garrison Reservoir (Pruess Lake)		2B	3B	4
Gunnison Bend Reservoir		2B	3B	4

n. Morgan County

TABLE

East Canyon Reservoir	1C 2A		3A	4
Lost Creek Reservoir	1C	2B	3A	4

o. Piute County

TABLE

Barney Reservoir		2B	3A	4
Lower Boxcreek Reservoir		2B	3A	4
Manning Meadow Reservoir		2B	3A	4
Otter Creek Reservoir		2B	3A	4
Piute Reservoir		2B	3A	4
Upper Boxcreek Reservoir		2B	3A	4

p. Rich County

TABLE

Bear Lake (Utah portion)		2A	3A	4

ATTACHMENT 5

Birch Creek Reservoir		2B	3A		4
Little Creek Reservoir		2B	3A		4
Woodruff Creek Reservoir		2B	3A		4

q. Salt Lake County

TABLE

Decker Lake		2B	3B	3D	4
Lake Mary	1C	2B	3A		
Little Dell Reservoir	1C	2B	3A		
Mountain Dell Reservoir	1C	2B	3A		

r. San Juan County

TABLE

Blanding Reservoir #4	1C	2B	3A		4
Dark Canyon Lake	1C	2B	3A		4
Ken[']s Lake				2B	3A*[*] 4
Lake Powell (Utah portion)	1C	2A	3B		4
Lloyd[']s Lake			1C	2B	3A 4
Monticello Lake		2B	3A		4
Recapture Reservoir		2B	3A		4

(*) Site-specific criteria are associated with this use.

s. Sanpete County

ATTACHMENT 5

TABLE

Duck Fork Reservoir		2B	3A	4
Fairview Lakes	1C	2B	3A	4
Ferron Reservoir		2B	3A	4
Lower Gooseberry Reservoir	1C	2B	3A	4
Gunnison Reservoir		2B	3C	4
Island Lake		2B	3A	4
Miller Flat Reservoir		2B	3A	4
Ninemile Reservoir		2B	3A	4
Palisade Reservoir	2A		3A	4
Rolfson Reservoir		2B	3C	4
Twin Lakes		2B	3A	4
Willow Lake		2B	3A	4

t. Sevier County

TABLE

Annabella Reservoir		2B	3A	4
Big Lake		2B	3A	4
Farnsworth Lake		2B	3A	4
Fish Lake		2B	3A	4
Forsythe Reservoir		2B	3A	4
Johnson Valley Reservoir		2B	3A	4

Koosharem Reservoir	2B 3A	4
Lost Creek Reservoir	2B 3A	4
Redmond Lake	2B 3B	4
Rex Reservoir	2B 3A	4
Salina Reservoir	2B 3A	4
Sheep Valley Reservoir	2B 3A	4

u. Summit County

TABLE

Abes Lake	2B 3A	4
Alexander Lake	2B 3A	4
Amethyst Lake	2B 3A	4
Beaver Lake	2B 3A	4
Beaver Meadow Reservoir	2B 3A	4
Big Elk Reservoir	2B 3A	4
Blanchard Lake	2B 3A	4
Bridger Lake	2B 3A	4
China Lake	2B 3A	4
Cliff Lake	2B 3A	4
Clyde Lake	2B 3A	4
Coffin Lake	2B 3A	4
Cuberant Lake	2B 3A	4

ATTACHMENT 5

East Red Castle Lake			2B	3A	4
Echo Reservoir		1C	2A	3A	4
Fish Lake			2B	3A	4
Fish Reservoir			2B	3A	4
Haystack Reservoir #1			2B	3A	4
Henry[']s Fork Reservoir				2B	3A 4
Hoop Lake			2B	3A	4
Island Lake			2B	3A	4
Island Reservoir			2B	3A	4
Jesson Lake			2B	3A	4
Kamas Lake			2B	3A	4
Lily Lake			2B	3A	4
Lost Reservoir			2B	3A	4
Lower Red Castle Lake			2B	3A	4
Lyman Lake		2A		3A	4
Marsh Lake			2B	3A	4
Marshall Lake			2B	3A	4
McPheters Lake			2B	3A	4
Meadow Reservoir			2B	3A	4
Meeks Cabin Reservoir			2B	3A	4
Notch Mountain Reservoir			2B	3A	4

Red Castle Lake		2B	3A	4
Rockport Reservoir	1C	2A	3A	4
Ryder Lake		2B	3A	4
Sand Reservoir		2B	3A	4
Scow Lake		2B	3A	4
Smith Moorehouse Reservoir	1C	2B	3A	4
Star Lake		2B	3A	4
Stateline Reservoir		2B	3A	4
Tamarack Lake		2B	3A	4
Trial Lake	1C	2B	3A	4
Upper Lyman Lake		2B	3A	4
Upper Red Castle		2B	3A	4
Wall Lake Reservoir		2B	3A	4
Washington Reservoir		2B	3A	4
Whitney Reservoir		2B	3A	4

v. Tooele County

TABLE

Blue Lake		2B	3B	4
Clear Lake		2B	3B	4
Grantsville Reservoir		2B	3A	4
Horseshoe Lake		2B	3B	4

Kanaka Lake		2B	3B	4
Rush Lake		2B	3B	
Settlement Canyon Reservoir		2B	3A	4
Stansbury Lake		2B	3B	4
Vernon Reservoir		2B	3A	4

w. Uintah County

TABLE

Ashley Twin Lakes (Ashley Creek)	1C	2B	3A	4
Bottle Hollow Reservoir		2B	3A	4
Brough Reservoir		2B	3A	4
Calder Reservoir		2B	3A	4
Crouse Reservoir		2B	3A	4
East Park Reservoir		2B	3A	4
Fish Lake		2B	3A	4
Goose Lake #2		2B	3A	4
Matt Warner Reservoir		2B	3A	4
Oaks Park Reservoir		2B	3A	4
Paradise Park Reservoir		2B	3A	4
Pelican Lake		2B	3B	4
Red Fleet Reservoir	1C	2A	3A	4
Steinaker Reservoir	1C	2A	3A	4

Towave Reservoir		2B	3A	4
Weaver Reservoir		2B	3A	4
Whiterocks Lake		2B	3A	4
Workman Lake		2B	3A	4

x. Utah County

TABLE

Big East Lake		2B	3A	4
Salem Pond	2A		3A	4
Silver Flat Lake Reservoir		2B	3A	4
Tibble Fork Resevoir		2B	3A	4
Utah Lake		[~~2B~~]2A	3B	3D 4

y. Wasatch County

TABLE

Currant Creek Reservoir	1C	2B	3A	4
Deer Creek Reservoir	1C 2A		3A	4
Jordanelle Reservoir	1C 2A		3A	4
Mill Hollow Reservoir		2B	3A	4
Strawberry Reservoir	1C	2B	3A	4

z. Washington County

TABLE

ATTACHMENT 5

Baker Dam Reservoir		2B	3A	4
Gunlock Reservoir	1C	2A	3B	4
Ivins Reservoir		2B	3B	4
Kolob Reservoir		2B	3A	4
Lower Enterprise Reservoir		2B	3A	4
Quail Creek Reservoir	1C	2A	3B	4
Sand Hollow Reservoir	1C	2A	3B	4
Upper Enterprise Reservoir		2B	3A	4

aa. Wayne County

TABLE

Blind Lake		2B	3A	4
Cook Lake		2B	3A	4
Donkey Reservoir		2B	3A	4
Fish Creek Reservoir		2B	3A	4
Mill Meadow Reservoir		2B	3A	4
Raft Lake		2B	3A	4

bb. Weber County

TABLE

Causey Reservoir		2B	3A	4
Pineview Reservoir	1C	2A	3A	4

[~~** Denotes site-specific temperature, see Table 2.14.2 Notes~~
]

13.13 Unclassified Waters

ATTACHMENT 5

All waters not specifically classified are presumptively classified: 2B, 3D

R317-2-14. Numeric Criteria.

TABLE 2.14.1
NUMERIC CRITERIA FOR DOMESTIC,
RECREATION, AND AGRICULTURAL USES

Parameter	Domestic[———] Source[———] 1C(1)[———]	Recreation and Aesthetics 2A	2B	Agriculture 4
BACTERIOLOGICAL (30-DAY GEOMETRIC MEAN) (NO.)/100 ML) (7)				
E. coli	206	126	206	
MAXIMUM (NO.)/100 ML) (7)				
E. coli	668	409	668	
PHYSICAL				
pH (RANGE)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0
Turbidity Increase (NTU)		10	10	
METALS (DISSOLVED, MAXIMUM MG/L) (2)				
Arsenic	0.01			0.1
Barium	1.0			
Beryllium	<0.004			
Cadmium	0.01			0.01
Chromium	0.05			0.10
Copper				0.2
Lead	0.015			0.1
Mercury	0.002			
Selenium	0.05			0.05
Silver	0.05			
INORGANICS (MAXIMUM MG/L)				

ATTACHMENT 5

Bromate	0.01		
Boron			0.75
Chlorite	<1.0		
Fluoride [~~(3)~~]	4.0[~~1.4-2.4~~]		
Nitrates as N	10		
Total Dissolved Solids (4)			1200
	RADIOLOGICAL		
(MAXIMUM pCi/L)			
Gross Alpha	15		15
Gross Beta (Combined)	4 mrem/yr 5	Radium 226, 228	
Strontium 90	8		
Tritium	20000		
Uranium	30		
ORGANICS			
(MAXIMUM UG/L)			
[~~Chlorophenoxy Herbicides~~]			
2,4-D 94-75-7[~~_____~~]	70		
2,4,5-TP 93-72-1[~~_____~~]	10[~~Methoxychlor 40~~]		
Alachlor 15972-60-8	2		
Atrazine 1912-24-9	3		
Carbofuran 1563-66-2	40		
Dalapon 75-99-0	200		
Di(2ethylhexl)adipate 103-23-1	400		
Dibromochloropropane 96-12-8	0.2		
Dinoseb 88-85-7	7		
Diquat 85-00-7	20		
Endothall 145-73-3	100		
Ethylene Dibromide 106-93-4	0.05		
POLLUTION INDICATORS (5)			
BOD (MG/L)	5	5	5
Nitrate as N (MG/L)	4	4	

Total Phosphorus as P (MG/L)(6)	0.05	0.05

FOOTNOTES:

(1)..[~~Reserved~~]See also numeric criteria for water and organism in Table 2.14.6.

(2) The dissolved metals method involves filtration of the sample in the field, acidification of the sample in the field, no digestion process in the laboratory, and analysis by approved laboratory methods for the required detection levels.

(3) Reserved[~~Maximum concentration varies according to the daily maximum mean air temperature.~~

~~TEMP (C)~~	~~MG/L~~
~~12.0~~	~~2.4~~
~~12.1-14.6~~	~~2.2~~
~~14.7-17.6~~	~~2.0~~
~~17.7-21.4~~	~~1.8~~
~~21.5-26.2~~	~~1.6~~
~~26.3-32.5~~	~~1.4~~]

(4) SITE SPECIFIC STANDARDS FOR TOTAL DISSOLVED SOLIDS (TDS)

Blue Creek and tributaries, Box Elder County, from Bear River Bay, Great Salt Lake to Blue Creek Reservoir:
March through October daily maximum 4,900 mg/l and an average of 3,800 mg/l; November through February daily maximum 6,300 mg/l and an average of 4,700 mg/l. Assessments will be based on TDS concentrations measured at the location of STORET 4960740.

Blue Creek Reservoir and tributaries, Box Elder County, daily maximum 2,100 mg/l;

Castle Creek from confluence with the Colorado River to Seventh Day Adventist Diversion: 1,800 mg/l;

Cottonwood Creek from the confluence with Huntington Creek to Highway[~~I-57:~~]
U-57: 3,500 mg/l;

ATTACHMENT 5

Ferron Creek from the confluence with San Rafael River to Highway U-10: 3,500 mg/l;

Huntington Creek and tributaries from the confluence with Cottonwood Creek to Highway U-10: 4,800 mg/l;

Ivie Creek and its tributaries from the confluence with Muddy Creek to the confluence with Quitchupah Creek: 3,800 mg/l provided that total sulfate not exceed 2,000 mg/l to protect the livestock watering agricultural existing use;

Ivie Creek and its tributaries from the confluence with Quitchupah Creek to Highway U-10: 2,600 mg/l;

Lost Creek from the confluence with Sevier River to U.S.[~~Forest~~] National Forest[~~Service B~~] boundary: 4,600 mg/l;

Muddy Creek and tributaries from the confluence with Ivie Creek to Highway U-10: 2,600 mg/l;

Muddy Creek from confluence with Fremont River to confluence with Ivie Creek: 5,800 mg/l;

North Creek from the confluence with Virgin River to headwaters: 2,035 mg/l;

Onion Creek from the confluence with Colorado River to road crossing above Stinking Springs: 3000 mg/l;

Brine Creek-Petersen Creek, from the confluence with the Sevier River to Highway U-119 Crossing: 9,700 mg/l;

Price River and tributaries from confluence with Green River to confluence with Soldier Creek: 3,000 mg/l;

Price River and tributaries from the confluence with Soldier Creek to Carbon Canal Diversion: 1,700 mg/l;

Quitchupah Creek and tributaries from the confluence with Ivie Creek to Highway U-10:[
] 3,800 mg/l provided that total sulfate not exceed 2,000 mg/l to protect the livestock watering agricultural

existing use;

Rock Canyon Creek from the confluence with Cottonwood Creek to headwaters: 3,500 mg/l;

San Pitch River from below Gunnison Reservoir to the Sevier River: 2,400 mg/l;

San Rafael River from the confluence with the Green River to Buckhorn Crossing: 4,100 mg/l;

San Rafael River from the Buckhorn Crossing to the confluence with Huntington Creek and Cottonwood Creek: 3,500 mg/l;

Sevier River between Gunnison Bend Reservoir and DMAD Reservoir: 1,725 mg/l;

Sevier River from Gunnison Bend Reservoir to [~~Clear~~]Crafts Lake: 3,370_[
]mg/l;

South Fork Spring Creek from confluence with Pelican Pond Slough Stream to U.S. Highway 89[————————] 1,450 mg/l (Apr.-Sept.)
1,950 mg/l (Oct.-March)

Virgin River from the Utah/Arizona border to Pah Tempe Springs: 2,360 mg/l

(5) Investigations should be conducted to develop more information where these pollution indicator levels are exceeded.

(6) Total Phosphorus as P (mg/l) indicator for lakes and reservoirs shall be 0.025.

(7) Where the criteria are exceeded and there is a reasonable basis for concluding that the indicator bacteria E. coli are primarily from natural sources (wildlife), e.g., in National Wildlife Refuges and State Waterfowl Management Areas, the criteria may be considered attained provided the density attributable to non-wildlife sources is less than the criteria. Exceedences of E. coli from nonhuman nonpoint sources will generally be addressed through appropriate Federal, State, and local nonpoint source programs.

ATTACHMENT 5

Measurement of E. coli using the "Quanti-Tray 2000" procedure is approved as a field analysis. Other EPA approved methods may also be used.

For water quality assessment purposes, up to 10% of representative samples may exceed the 668 per 100 ml criterion (for 1C and 2B waters) and 409 per 100 ml (for 2A waters). For small datasets, where exceedences of these criteria are observed, follow-up ambient monitoring should be conducted to better characterize water quality.

TABLE 2.14.2
NUMERIC CRITERIA FOR AQUATIC WILDLIFE(8)

Parameter	Aquatic Wildlife				
	3A	3B	3C	3D	5
PHYSICAL					
Total Dissolved Gases	(1)	(1)			
Minimum Dissolved Oxygen (MG/L) (2)(2a)					
30 Day Average	6.5	5.5	5.0	5.0	
7 Day Average	9.5/5.0	6.0/4.0			
Minimum	8.0/4.0	5.0/3.0	3.0	3.0	
Max. Temperature(C)(3)	20	27	27		
Max. Temperature Change (C)(3)	2	4	4		
pH (Range)(2a)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	
Turbidity Increase (NTU)	10	10	15	15	
METALS (4) (DISSOLVED, UG/L)(5)					
Aluminum					
4 Day Average (6)	87	87	87	87	
1 Hour Average	750	750	750	750	

ATTACHMENT 5

Arsenic (Trivalent)				
4 Day Average	150	150	150	150
1 Hour Average	340	340	340	340
Cadmium (7)				
4 Day Average	[~~0.25~~]0.72	[~~0.25~~]0.72	[~~0.25~~]0.72	[~~0.25~~]0.72
1 Hour Average	[~~2.0~~]1.8	[~~2.0~~]1.8	[~~2.0~~]1.8	1.8[~~2.0~~]
Chromium (Hexavalent)				
4 Day Average	11	11	11	11
1 Hour Average	16	16	16	16
Chromium (Trivalent) (7)				
4 Day Average	74	74	74	74
1 Hour Average	570	570	570	570
Copper (7)				
4 Day Average	9	9	9	9
1 Hour Average	13	13	13	13
Cyanide (Free)				
4 Day Average	5.2	5.2	5.2	
1 Hour Average	22	22	22	22
Iron (Maximum)	1000	1000	1000	1000
Lead (7)				
4 Day Average	2.5	2.5	2.5	2.5
1 Hour Average	65	65	65	65
Mercury				
4 Day Average	0.012	0.012	0.012	0.012
Nickel (7)				
4 Day Average	52	52	52	52
1 Hour Average	468	468	468	468
Selenium				
4 Day Average	4.6	4.6	4.6	4.6
1 Hour Average	18.4	18.4	18.4	18.4

ATTACHMENT 5

Selenium (14)				
Gilbert Bay (Class 5A)				
Great Salt Lake				
Geometric Mean over				
Nesting Season (mg/kg dry wt)				12.5
Silver				
1 Hour Average (7)	[~~1.6~~]3.2	[~~1.6~~]3.2	[~~1.6~~]3.2	[~~1.6~~]3.2
Tributyltin				
4 Day Average	0.072	0.072	0.072	0.072
1 Hour Average	0.46	0.46	0.46	0.46
Zinc (7)				
4 Day Average	120	120	120	120
1 Hour Average	120	120	120	120
INORGANICS				
(MG/L) (4)				
Total Ammonia as N (9)				
30 Day Average	(9a)	(9a)	(9a)	(9a)
1 Hour Average	(9b)	(9b)	(9b)	(9b)
Chlorine (Total				
Residual)				
4 Day Average	0.011	0.011	0.011	0.011
1 Hour Average	0.019	0.019	0.019	0.019
Hydrogen Sulfide				
(Undissociated,				
Max. UG/L)	2.0	2.0	2.0	2.0
Phenol (Maximum)	0.01	0.01	0.01	0.01
RADIOLOGICAL	(MAXIMUM pCi/L)			
ORGANICS (UG/L) (4)				
Acrolein				
4 Day Average	3.0	3.0	3.0	3.0
1 Hour Average	3.0	3.0	3.0	3.0
Aldrin				

1 Hour Average	1.5	1.5	1.5	1.5
Carbaryl				
4 Day Average	2.1	2.1	2.1	2.1
1 Hour Average	2.1	2.1	2.1	2.1
Chlordane				
4 Day Average	0.0043	0.0043	0.0043	0.0043
1 Hour Average	1.2	1.2	1.2	1.2
Chlorpyrifos				
4 Day Average	0.041	0.041	0.041	0.041
1 Hour Average	0.083	0.083	0.083	0.083
4,4' -DDT				
4 Day Average	0.0010	0.0010	0.0010	0.0010
1 Hour Average	0.55	0.55	0.55	0.55
Diazinon				
4 Day Average	0.17	0.17	0.17	0.17
1 Hour Average	0.17	0.17	0.17	0.17
Dieldrin				
4 Day Average	0.056	0.056	0.056	0.056
1 Hour Average	0.24	0.24	0.24	0.24
Alpha-Endosulfan				
4 Day Average	0.056	0.056	0.056	0.056
1 Hour Average	0.11	0.11	0.11	0.11
beta-Endosulfan				
4 Day Average	0.056	0.056	0.056	0.056
1 Day Average	0.11	0.11	0.11	0.11
Endrin				
4 Day Average	0.036	0.036	0.036	0.036
1 Hour Average	0.086	0.086	0.086	0.086
Heptachlor				
4 Day Average	0.0038	0.0038	0.0038	0.0038
1 Hour Average	0.26	0.26	0.26	0.26

Heptachlor epoxide				
4 Day Average	0.0038	0.0038	0.0038	0.0038
1 Hour Average	0.26	0.26	0.26	0.26
Hexachlorocyclohexane (Lindane)				
4 Day Average	0.08	0.08	0.08	0.08
1 Hour Average	1.0	1.0	1.0	1.0
Methoxychlor (Maximum)	0.03	0.03	0.03	0.03
Mirex (Maximum)	0.001	0.001	0.001	0.001
Nonylphenol				
4 Day Average	6.6	6.6	6.6	6.6
1 Hour Average	28.0	28.0	28.0	28.0
Parathion				
4 Day Average	0.013	0.013	0.013	0.013
1 Hour Average	0.066	0.066	0.066	0.066
PCB[1]s				
4 Day Average	0.014	0.014	0.014	0.014
Pentachlorophenol (11)				
4 Day Average	15	15	15	15
1 Hour Average	19	19	19	19
Toxaphene				
4 Day Average	0.0002	0.0002	0.0002	0.0002
1 Hour Average	0.73	0.73	0.73	0.73
POLLUTION INDICATORS (10)				
Gross Alpha (pCi/L)	15	15	15	15
Gross Beta (pCi/L)	50	50	50	50
BOD (MG/L)	5	5	5	5
Nitrate as N (MG/L)	4	4	4	
Total Phosphorus as P(MG/L) (12)				
	0.05	0.05		

FOOTNOTES:

(1) Not to exceed 110% of saturation.

(2) These limits are not applicable to lower water levels in deep impoundments. First number in column is for when early life stages are present, second number is for when all other life stages present.

(2a) These criteria are not applicable to Great Salt Lake impounded wetlands. Surface water in these wetlands shall be protected from changes in pH and dissolved oxygen that create significant adverse impacts to the existing beneficial uses. To ensure protection of uses, the Director shall develop reasonable protocols and guidelines that quantify the physical, chemical, and biological integrity of these waters. These protocols and guidelines will include input from local governments, the regulated community, and the general public. The Director will inform the Water Quality Board of any protocols or guidelines that are developed.

(3) Site Specific Standards for Temperature Ken[~~l~~]s Lake: From June 1st - September 20th, 27 degrees C.

(4) Where criteria are listed as 4-day average and 1-hour average concentrations, these concentrations should not be exceeded more often than once every three years on the average.

(5) The dissolved metals method involves filtration of the sample in the field, acidification of the sample in the field, no digestion process in the laboratory, and analysis by EPA approved laboratory methods for the required detection levels.

(6) The criterion for aluminum will be implemented as follows:

Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaC03 in the receiving water after mixing, the 87 ug/1 chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/1 acute aluminum criterion (expressed as total recoverable).

(7) Hardness dependent criteria. 100 mg/l used. Conversion factors for ratio of total recoverable metals to dissolved metals must also be applied. In waters with a hardness greater than 400 mg/l as CaC03, calculations will assume a hardness of 400 mg/l as CaC03. See Table 2.14.3 for complete equations for hardness and conversion factors.

(8) [~~Reserved~~]See also numeric criteria for organism only in Table 2.14.6.

(9) The following equations are used to calculate Ammonia criteria concentrations:

(9a) The thirty-day average concentration of total ammonia nitrogen (in mg/l as N) does not exceed, more than once every three years on the average, the chronic criterion calculated using the following equations.

Fish Early Life Stages are Present:

mg/l as N (Chronic) = $((0.0577/(1+10^{7.688-pH})) + (2.487/(1+10^{pH-7.688}))) * MIN (2.85, 1.45*10^{0.028*(25-T)})$

Fish Early Life Stages are Absent:

mg/1 as N (Chronic) = $((0.0577/(1+10^{7.688-pH})) + (2.487/(1+10^{pH-7.688}))) * 1.45*10^{0.028* (25-MAX(T,7))})$

(9b) The one-hour average concentration of total ammonia nitrogen (in mg/l as N) does not exceed, more than once every three years on the average the acute criterion calculated using the following equations.

Class 3A:

mg/l as N (Acute) = $(0.275/(1+10^{7.204-pH})) + (39.0/1+10^{pH-7.204}))$

Class 3B, 3C, 3D:

mg/l as N (Acute) = $0.411/(1+10^{7.204-pH})) + (58.4/(1+10^{pH-7.204}))$

In addition, the highest four-day average within the 30-day period should not exceed 2.5 times the chronic criterion. The "Fish Early Life Stages are Present" 30-day average total ammonia criterion will be applied by default unless it is determined by the Director, on a site-specific basis, that it is appropriate to apply the "Fish Early Life Stages are Absent" 30-day average criterion for all or some portion of the year. At a minimum, the "Fish Early Life Stages are Present" criterion will apply from the beginning of spawning through the end of the early life stages. Early life stages include the pre-hatch embryonic stage, the post-hatch free embryo or yolk-sac fry stage, and the larval stage for the species of fish expected to occur at the site. The Director will consult with the Division of Wildlife Resources in making such determinations. The Division will maintain information regarding the waterbodies and time periods where application of the "Early Life Stages are Absent" criterion is determined to be appropriate.

(10) Investigation should be conducted to develop more information where these levels are exceeded.

(11) pH dependent criteria. pH 7.8 used in table. See Table 2.14.4 for equation.

(12) Total Phosphorus as P (mg/l) as a pollution indicator for lakes and reservoirs shall be 0.025.

(13) Reserved

(14) The selenium water quality standard of 12.5 (mg/kg dry weight) for Gilbert Bay is a tissue based standard using the complete egg/embryo of aquatic dependent birds using Gilbert Bay based upon a minimum of five samples over the nesting season. Assessment procedures are incorporated as a part of this standard as follows:

Egg Concentration Triggers: DWQ Responses

Below 5.0 mg/kg: Routine monitoring with sufficient intensity to determine if selenium concentrations within the Great Salt Lake ecosystem are increasing.

5.0 mg/kg: Increased monitoring to address data gaps, loadings, and areas of uncertainty identified from initial Great Salt Lake selenium studies.

6.4 mg/kg: Initiation of a Level II Antidegradation review by the State for all discharge permit renewals or new discharge permits to Great Salt Lake. The Level II Antidegradation review may include an analysis of loading reductions.

9.8 mg/kg: Initiation of preliminary TMDL studies to evaluate selenium loading sources.

12.5 mg/kg and above: Declare impairment. Formalize and implement TMDL.

Antidegradation
Level II Review procedures associated with this standard are referenced at R317-2-3.5.C.

TABLE
1-HOUR AVERAGE (ACUTE) CONCENTRATION OF
TOTAL AMMONIA AS N (MG/L)

pH	Class 3A	Class 3B, 3C, 3D
6.5	32.6	48.8
6.6	31.3	46.8

6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.89	1.32

TABLE
30-DAY AVERAGE (CHRONIC) CONCENTRATION OF
TOTAL AMMONIA AS N (MG/l)

Fish Early Life Stages Present
Temperature, C

pH	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74

7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.90
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.88	0.77
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.97	0.86	0.75	0.66
8.3	1.52	1.52	1.39	1.22	1.07	0.94	0.83	0.73	0.64	0.56
8.4	1.29	1.29	1.17	1.03	0.91	0.80	0.70	0.62	0.54	0.48
8.5	1.09	1.09	0.99	0.87	0.76	0.67	0.59	0.52	0.46	0.40
8.6	0.92	0.92	0.84	0.73	0.65	0.57	0.50	0.44	0.39	0.34
8.7	0.78	0.78	0.71	0.62	0.55	0.48	0.42	0.37	0.33	0.29
8.8	0.66	0.66	0.60	0.53	0.46	0.41	0.36	0.32	0.28	0.24
8.9	0.56	0.56	0.51	0.45	0.40	0.35	0.31	0.27	0.24	0.21
9.0	0.49	0.49	0.44	0.39	0.34	0.30	0.26	0.23	0.20	0.18

TABLE
30-DAY AVERAGE (CHRONIC) CONCENTRATION OF
TOTAL AMMONIA AS N (MG/l)

Fish Early Life Stages Absent

pH	Temperature, C 0-7	8	9	10	11	12	13	14	16
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.36	6.89	6.06
6.6	10.7	[~~10.1~~]9.99	9.37	[~~9.37~~]8.79	[~~8.79~~]8.24	[~~8.24~~]7.72	[~~7.72~~]7.24	[~~7.24~~]6.79	[~~6.36~~]5.97
6.7	10.5	[~~9.99~~]9.81	9.20	8.62	8.08	7.58	7.11	6.66	5.86
6.8	10.2	[~~9.81~~]9.58	8.98	8.42	7.90	7.40	6.94	6.51	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.54

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8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	0.990
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.601
8.9	0.917	0.860	0.806	0.758	0.709	0.664	0.623	0.584	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.442

pH	18	20	22	24	26	28	30		
6.5	5.33	4.68	4.12	3.62	3.18	2.80	2.46		
6.6	5.25	4.61	4.05	3.56	3.13	2.75	2.42		
6.7	5.15	4.52	3.98	3.50	3.07	2.70	2.37		
6.8	5.03	4.42	3.89	3.42	3.00	2.64	2.32		
6.9	4.89	4.30	3.78	3.32	2.92	2.57	2.25		
7.0	4.72	4.15	3.65	3.21	2.82	2.48	2.18		
7.1	4.53	3.98	3.50	3.08	2.70	2.38	2.09		
7.2	4.41	3.78	3.33	2.92	2.57	2.26	1.99		
7.3	4.06	3.57	3.13	2.76	2.42	2.13	1.87		
7.4	3.78	3.32	2.92	2.57	2.26	1.98	1.74		
7.5	3.49	3.06	2.69	2.37	2.08	1.83	1.61		
7.6	3.18	2.79	2.45	2.16	1.90	1.67	1.47		
7.7	2.86	2.51	2.21	1.94	1.71	1.50	1.32		
7.8	2.54	2.23	1.96	1.73	1.52	1.33	1.17		
7.9	2.24	1.96	1.73	1.52	1.33	1.17	1.03		
8.0	[~~0.94~~]1.94	1.71	1.50	1.32	1.16	1.02	0.897		
8.1	[~~0.68~~]1.68	1.47	1.29	1.14	1.00	0.879	0.733		
8.2	[~~0.43~~]1.43	1.26	1.11	[~~0.073~~]1.073	0.855	0.752	0.661		
8.3	[~~0.22~~]1.22	1.07	0.941	0.827	0.727	0.639	0.562		
8.4	[~~0.03~~]1.03	0.906	0.796	0.700	0.615	0.541	0.475		
8.5	0.870	0.765	0.672	0.591	0.520	0.457	0.401		
8.6	0.735	0.646	0.568	0.499	0.439	0.396	0.339		
8.7	0.622	0.547	0.480	0.422	0.371	0.326	0.287		
8.8	0.528	0.464	0.408	0.359	0.315	0.277	0.244		
8.9	0.451	0.397	0.349	0.306	0.269	0.237	0.208		
9.0	0.389	0.342	0.300	0.264	0.232	0.204	0.179		

TABLE 2.14.3a

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EQUATIONS TO CONVERT TOTAL RECOVERABLE METALS STANDARD WITH HARDNESS (1) DEPENDENCE TO DISSOLVED METALS STANDARD BY APPLICATION OF A CONVERSION FACTOR (CF).

Parameter	4-Day Average (Chronic) Concentration (UG/L)
CADMIUM	$CF * [e^{(0.7409\ (ln(hardness))\ -4.719}]e^{(0.7977*ln(hardness)-.909)}$ $CF = 1.101672 - ln(hardness)\ (0.041838)$
CHROMIUM III	$CF * e^{(0.8190(ln(hardness))\ +\ 0.6848}$ $CF = 0.860$
COPPER	$CF * e^{(0.8545(ln(hardness))\ -1.702)}$ $CF = 0.960$
LEAD	$CF * e^{(1.273(ln(hardness))-4.705)}$ $CF = 1.46203 - ln(hardness)(0.145712)$
NICKEL	$CF * e^{(0.8460(ln(hardness))+0.0584)}$ $CF = 0.997$
SILVER	N/A
ZINC	$Cf * e^{(0.8473(ln(hardness))+0.884)}$ $CF = 0.986$

TABLE 2.14.3b

EQUATIONS TO CONVERT TOTAL RECOVERABLE METALS STANDARD WITH HARDNESS (1) DEPENDENCE TO DISSOLVED METALS STANDARD BY APPLICATION OF A CONVERSION FACTOR (CF).

Parameter	1-Hour Average (Acute) Concentration (UG/L)
CADMIUM	$CF * [e^{(1.0166(ln(hardness))-3.924)}]e^{(0.9789*ln(hardness)-3.866)}$ $CF = 1.136672 - ln(hardness)(0.041838)$
CHROMIUM (III)	$CF * e^{(0.8190(ln(hardness))\ +3.7256)}$ $CF = 0.316$

COPPER CF * $e^{(0.9422(\ln(\text{hardness}))-1.700)}$

CF = 0.960

LEAD CF * $e^{(1.273(\ln(\text{hardness}))-1.460)}$

CF = 1.46203 - ln(hardness)(0.145712)

NICKEL CF * $e^{(0.8460(\ln(\text{hardness}))+2.255)}$

CF= 0.998

SILVER CF * $e^{(1.72(\ln(\text{hardness}))-6.59)}$

CF = 0.85

ZINC CF * $e^{(0.8473(\ln(\text{hardness}))+0.884)}$

CF = 0.978

FOOTNOTE:

(1) Hardness as mg/l $CaCO_3$.

TABLE 2.14.4
EQUATIONS FOR PENTACHLOROPHENOL
(pH DEPENDENT)

4-Day Average (Chronic) Concentration (UG/L)	1-Hour Average (Acute) Concentration (UG/L)
$e^{(1.005(pH))-5.134}$	$e^{(1.005(pH))-4.869}$

TABLE 2.14.5
SITE SPECIFIC CRITERIA FOR
DISSOLVED OXYGEN FOR JORDAN RIVER, SURPLUS CANAL, AND STATE CANAL
(SEE SECTION 2.13)

DISSOLVED OXYGEN:

May-July	
7-day average	5.5 mg/l
30-day average	5.5 mg/l
Instantaneous minimum	4.5 mg/l
August-April	
30-day average	5.5 mg/l
Instantaneous minimum	4.0 mg/l

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TABLE 2.14.6

LIST OF HUMAN HEALTH CRITERIA (CONSUMPTION)

Chemical Parameter [ ]and CAS #	Water and Organism (ug/L) Class 1C	Organism Only (ug/L) Class 3A,3B,3C,3D
Antimony 7440-36-0[ ]	5.6	640
Arsenic 7440-38-2[ ]	A	A
Beryllium 7440-41-7[ ]	C	C
[~~Cadmium~~	~~C~~	~~C~~
]Chromium III 16065-83-1 [ ]	C	C
Chromium VI 18540-29-9 [ ]	C	C
Copper 7440-50-8 [ ]	1,300	
[~~Lead~~	~~C~~	~~C~~
]Mercury 7439-97-6 [ ]	A	A
Nickel 7440-02-0 [ ]		[~~100 MCL~~]610
4,600		
Selenium 7782-49-2 [ ]		[~~A~~]170
4,200		
Thallium 7440-28-0 [ ]	0.24	0.47
Zinc 7440-66-6 [ ]	7,400	26,000
Free Cyanide 57-12-5 [ ]	140	140
Asbestos 1332-21-4 [ ]	7 million Fibers/L	
2,3,7,8-TCDD Dioxin 1746-01-6 [ ]	5.0 E -9 B	5.1 E-9 B
Acrolein 107-02-8 [ ]		[~~6.0~~]3.0
[~~9.0~~]400		
Acrylonitrile 107-13-1 [ ]		[~~0.051 B~~]0.061
[~~0.25 B~~]7.0		
[~~Alachlor~~	~~2.0~~	
]Atrazine 1912-24-9 [ ]	3.0	
Benzene 71-43-2 [ ]	[~~2.2~~]2.1 B	51 B
Bromoform 75-25-2 [ ]		[~~4.3~~]7.0 B
[~~140~~]120 B		
[~~Carbofuran~~	~~40~~	
]Carbon Tetrachloride 56-23-5 [ ]		[~~0.23~~]0.4 B
[~~1.6~~] 5 B		
Chlorobenzene 57-12-5 [ ]	100 MCL	1,600
Chlorodibromomethane 124-48-1 [ ]	0.40 B	13 B
[~~Chloroethane~~		
~~2-Chloroethylvinyl Ether~~		

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]Chloroform 67-66-3 [————] 5.7 B 470 B
Dalapon 75-99-0 [————] 200
[~~Di(2ethylhexl)adipate 400~~
~~Dibromochloropropane 0.2~~
]Dichlorobromomethane 75-27-4 [————] 0.55 B 17 B
[~~1,1-Dichloroethane~~
]1,2-Dichloroethane 107-06-2 [————] [~~0.38~~]9.9 B
[~~37~~] 650 B
1,1-Dichloroethylene 75-35-4 [————] [~~7~~]300 MCL[———]
[~~7,100~~]20,000
Dichloroethylene (cis-1,2)
156-59-2 70
[~~Dinoseb 7.0~~
]Diquat 231-36-7 [————] 20
1,2-Dichloropropane 78-87-5 [————] [~~0.50~~]0.90 B
[~~15~~]31 B
1,3-Dichloropropene 542-75-6 [————] [~~0.34~~]0.27
[~~21~~]12
[~~Endothall 100~~
]Ethylbenzene 100-41-4[————] [~~530~~]68
[~~2,100~~]130
[~~Ethylene Dibromide 0.05~~
]Glyphosate 1071-83-6[————] 700
[~~Haloacetic acids 60 E~~
]Methyl Bromide 74-83-9 [————] [47]100[—]
[~~1,500~~]10,000
[~~Methyl Chloride F F~~
]Methylene Chloride 75-09-2 [————] [~~4.6~~]20 B
[~~590~~] 1,000 B
[~~Ocamyl (vidate) 200~~
~~Picloram 500~~
~~Simazine 4~~
~~Styrene 100~~
]1,1,2,2-Tetrachloroethane
79-34-5 [0.~~17~~]0.2 B [~~4.0~~] 3 B
Tetrachloroethylene 127-18-4 [————] [~~0.69~~]10 B
[~~3.3~~]29 B
Toluene 108-88-3[————] [~~1,000~~]57
[~~15,000~~] 520
1,2 -Trans-Dichloroethylene
156-60-5 100 MCL [~~10,000~~]4,000
1,1,1-Trichloroethane 71-55-6 [————~~200~~]10,000 MCL

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[~~F~~]200,000
1,1,2-Trichloroethane 79-00-5 [~~0.59~~]0.55 B
[~~16~~]8.9 B
Trichloroethylene 79-01-6 [~~2.5~~]0.6 B
[~~30~~]7 B
Vinyl Chloride 75-01-4 [~~0.025~~]0.022
[~~2.4~~]1.6
Xylenes 1330-20-7 [~~~~] 10,000
2-Chlorophenol 95-57-8 [~~81~~]30
[~~150~~]800
2,4-Dichlorophenol 120-83-2 [~~77~~]10
[~~290~~]60
2,4-Dimethylphenol 105-67-9 [~~380~~]100
[~~850~~]3,000
2-Methyl-4,6-Dinitrophenol
534-52-1 [~~13.0~~]2 [~~280~~]30
2,4-Dinitrophenol 51-28-5 [~~69~~]10
[~~5,300~~]300
[~~2-Nitrophenol~~
~~4-Nitrophenol~~
]3-Methyl-4-Chlorophenol
59-50-7 500 2,000
Pen[~~e~~]tachlorophenol 87-86-5 [~~0.27~~]0.03 B
[~~3.0~~]0.04 B
Phenol 108-95-2 [~~10,000~~]4,000
[~~860,000~~]300,000
2,4,5-Trichlorophenol 95-95-4 300 600
2,4,6-Trichlorophenol 88-06-2 [~~1.4~~]1.5 B
[~~2.4~~]2.8 B
Acenaphthene 83-32-9 [~~670~~]70
[~~990~~] 90
[~~Acenaphthylene~~
]Anthracene 120-12-7 [~~8,300~~]300
[~~40,000~~] 400
Benzidine 92-87-5 [~~0.000086~~]0.00014 B
[~~0.00020~~]0.011 B
BenzoaAnthracene 56-55-3 [~~0.0038~~]0.0012 B
[~~0.018~~]0.0013 B
BenzoaPyrene 50-32-8 [~~0.0038~~]0.00012 B
[~~0.018~~]0.00013 B
BenzobFluoranthene 205-99-2 [~~0.0038~~]0.0012 B
0.018 B

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[~~BenzoghiPerylene~~
]BenzokFluoranthene 207-08-9 [———————] [~~0.0038~~]0.012 B
[~~0.018~~] 0.013 B
[~~Bis2-ChloroethoxyMethane~~
]Bis2-Chloro1methylether
542-88-1 0.00015 0.017
Bis2-Chloro1methylethylether
108-60-1 200 B 4000
Bis2-ChloroethylEther
111-44-40 0.030 B [~~0.53~~]2.2 B
Bis2-Chloro1methylether
542-88-1 0.00015 0.017
Bis2-Chloro1methylethylether
108-60-1 200 B 4000
Bis2-Chloroisopropy1Ether
39638-32-9 1,400 65,000
Bis2-EthylhexylPhthalate
117-81-7 [~~1.2~~]0.32 B[——]
[~~2.20~~]0.037 B
[~~4-Bromophenyl Phenyl Ether~~
]Butylbenzyl Phthalate
85-68-7 [~~1,500~~]0.1 [~~1,900~~]
0.1
2-Chloronaphthalene 91-58-7 [———————] [~~1,000~~]800
[~~1,600~~]1,000
[~~4-Chlorophenyl Phenyl Ether~~
]Chrysene 218-01-9 [————] 0.0038 B 0.018 B
Dibenzoa,hAnthracene 53-70-3 [————] 0.0038 B 0.018 B
1,2-Dichlorobenzene 95-50-1 [———————] [~~420~~]1,000[———]
[~~1,300~~]3,000
1,3-Dichlorobenzene 541-73-1 [———————] [~~320~~]7
[~~960~~]10
1,4-Dichlorobenzene 106-46-7 [————] [~~63~~]300 [
~~190~~]900
3,3-Dichlorobenzidine
91-94-1 [~~0.021~~]0.04 B [~~0.028~~] 0.15
B
Diethyl Phthalate 64-66-2 [———————] [~~17,000~~]600
[~~44,000~~]600
Dimethyl Phthalate 131-11-3 [———————] [~~270,000~~]2,000
[~~1,100,000~~]2,000
Di-n-Butyl Phthalate 84-74-2 [———————] [~~2,000~~]20

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[~~4,500~~]30
2,4-Dinitrotoluene 121-14-2 [———————] [~~0.11~~]0.49 B
[~~3.4~~]1.7 B
Dinitrophenols 25550-58-7 10 1,000
[~~2,6-Dinitrotoluene~~
~~Di-n-Octyl Phthalate~~
]1,2-Diphenylhydrazine
122-66-7 0.036 B 0.20 B
Fluoranthene 206-44-0 [———————] [~~130~~]20
[~~140~~]20
Fluorene 86-73-7 [———————] [~~1,100~~]50
[~~5,300~~]70
Hexachlorobenzene 118-74-1 [———————] [~~0.00028~~]0.000079 B
[~~0.00029~~]0.000079 B
[~~Hexachlorobutedine~~]Hexachlorobutadiene 87-68-3 [———————]
[~~0.44~~]0.01 B [~~18~~]0.01 B
Hexachloroethane 67-72-1 [———] 1.4 B 3.3 B
Hexachlorocyclopentadiene
77-47-4 4[~~0~~] [~~1,100~~]4
Ideno 1,2,3-cdPyrene
193-39-5 [~~0.0038~~]0.0012 B
[~~0.018~~]0.0013 B
Isophorone 78-59-1 [———————] [~~35~~]34 B
[~~960~~]1,800 B
[~~Naphthalene~~
]Nitrobenzene 98-95-3 [———————] [~~17~~]10
[~~690~~]600
N-Nitrosodiethylamine 55-18-5 0.0008 B 1.24 B
N-Nitrosodimethylamine
62-75-9 0.00069 B 3.0 B
N-Nitrosodi-n-Propylamine
621-64-7 0.005 B 0.51 B
N-Nitrosodiphenylamine
86-30-6 3.3 B 6.0 B
N-Nitrosoyrrolidine 930-55-2 0.016 B 34 B
Pentachlorobenzene 608-93-5 0.1 0.1
[~~Phenanthrene~~]Pyrene 129-00-0 [~~830~~] 20
[~~4,000~~]30
1,2,4-Trichlorobenzene
120-82-1 [~~35~~]0.07 MCL[———————]
[~~70~~]0.076
Aldrin 309-00-2 [———] [~~0.000049~~]0.00000077 B [——]

ATTACHMENT 5

[~~0.000050~~]0.00000077 B
alpha-BHC 319-84-6 [————————] [~~0.0026~~]0.00036 B [—] [~~0.0049~~]0.000050 B
beta-BHC 319-85-7 [————————] [~~0.0091~~]0.008 B [~~0.017~~]0.014 B
gamma-BHC (Lindane) 58-89-9 [————————] [~~0.2~~]4.2 MCL [~~1.8~~]4.4
[~~delta-BHC~~
]Hexachlorocyclohexane (HCH)
Technical 608-73-1 0.0066 0.010
Chlordane 57-74-9 [————————] [~~0.00080~~]0.00030 B [~~0.00081~~]0.00032 B
4,4-DDT 50-29-3 [————————] [~~0.00022~~]0.000032 B [—] [~~0.00022~~]0.000030 B
4,4-DDE 72-55-9 [————————] [~~0.00022~~]0.000018 B [—] [~~0.00022~~]0.000018 B
4,4-DDD 72-54-8 [————————] [~~0.00031~~]0.00012 B [~~0.00031~~]0.00012 B
Dieldrin 60-57-1 [————————] [~~0.000052~~]0.0000012 B [—] [~~0.000054~~]0.0000012 B
alpha-Endosulfan 959-98-8 [————————] [~~62~~]20 [~~89~~]30
beta-Endosulfan 33213-65-9 [————————] [~~62~~]20 [~~89~~]40
Endosulfan Sulfate 1031-07-8 [————————] [~~62~~]20 [~~89~~]40
Endrin 72-20-8 [————————] [~~0.059~~]0.03 [0.060]0.03
Endrin Aldehyde 7421-93-4 [————————] [~~0.29~~]1 [~~0.30~~]1
Heptachlor 76-44-8 [————————] [~~0.000079~~]0.0000059 B [—] [~~0.000079~~]0.0000059 B
Heptachlor Epoxide 1024-57-3 [————————] [~~0.000039~~]0.000032 B [~~0.000039~~]0.000032 B
Methoxychlor 72-43-5 0.02 MCL 0.02
Polychlorinated Biphenyls (PCBs) 1336-36-3 0.000064 B,D 0.000064 B,D
[~~PCB's~~
]Toxaphene 8001-35-2 [————————] [~~0.00028~~]0.0007 B [~~0.00028~~]0.00071 B
Footnotes:
A. See Table 2.14.2

B. Based on carcinogenicity of 10-6 risk.

C. EPA has not calculated a human criterion for this contaminant. However, permit authorities should address this contaminant in NPDES permit actions using the State's existing narrative criteria for toxics

D. This standard applies to total PCBs.

KEY: water pollution, water quality standards
Date of Enactment or Last Substantive Amendment: [~~November 30, 2015~~]2018
Notice of Continuation: September 26, 2017[~~-1317, 1329~~]
Authorizing, and Implemented or Interpreted Law: 19-5; FWPCA 33 USC 1251, 1311-1317, 1329