State of Utah

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MEMORANDUM

TO: Water Quality Board

THROUGH: Walt Baker

FROM: Chris Bittner

DATE: January 8, 2012

SUBJECT: Proposed Change in Rule to Utah Administrative Code R317-2 *Standards of Quality for Waters of the State.*

Action Item

- Request Board adopt Utah's Water Quality Standards (R317-2) with changes and an effective date of April 1, 2012

The Board has three options:

1. Adopt the proposed change in rule with the additional revisions to be effective April 1, 2012 (staff's preferred option).
2. Adopt some of the changes and direct staff to prepare a Proposed Change in Rule for the additional revisions. Staff would return to the Board at a future meeting with recommendations.
3. Take no action or vote not to accept the proposed rule change. The proposed changes would not go into effect and staff would revise the rule to address the Board's concerns.

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Background

As approved by the Board at the September meeting, staff proceeded with rulemaking for revisions to R317-2. The public comment period ended began on November 1, 2011 and ended December 15, 2011. A public hearing was held December 5, 2011. USEPA Region 8 provided the only written comments and nobody attended the public hearing. USEPA's comment letter is provided as Attachment 1. USEPA is supportive of the proposed changes but made two suggestions (see Other Comments, p. 4 Attachment 1). These comments were addressed by making minor revisions to the proposed rule (Attachment 2). Attachment 2 shows both the initially proposed changes and the new changes.

If the Board adopts the rule with the changes, staff will file the Change in Proposed Rule with the Division of Administrative Rules and the rule can be effective after a 30-day notice period. Staff proposes an effective date of April 1, 2012 which will provide adequate time to file and complete the 30-day notice period.

USEPA's first comment noted that one of the changes to the Antidegradation Categories appeared incorrect. R317-2-12.1.a. was revised in 2010 by listing Weber River from Uintah to Mountain Green as a Category 2 water in R317-2-12.2 (see p. 13 Attachment 2). Staff subsequently realized that this reach of the Weber River was listed as an exception to Category 1 because of existing treatment facilities and is in fact a Category 3 water. The intent of this rulemaking was to correct this error by reverting to the previous (pre-2010) rule language.

The revisions presented to the Board in September 2011 made this correction but introduced another error by changing the reference to R317-2-12.2 to Category 3 instead of Category 2. R317-2-12.2 is a listing of Category 2 waters. This section of the rules has previously been misinterpreted. Therefore, staff is proposing to add numbers to the exceptions as shown in Attachment 2 in addition to correcting the Category 3 back to Category 2.

The other USEPA comment was a suggestion to change the spelling of tributyl tin to tributlytin. Staff concurs with this recommendation and made the change in the proposed rule revisions.

Staff recommends that the Board adopt the proposed rules with the changes. Attachment 3 is an example of the Board order to be signed by the Board Chair if adopted.

Supporting Documents

Attachment 1: USEPA 12/14/2011 Comment Letter

Attachment 2: Markup of Change in Proposed Rule

Attachment 3: Example of Board Order to be signed if Board adopts the change

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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Ref: 8EPR-EP 12/14/11

Walt Baker, Director
Division of Water Quality
Utah Department of Environmental Quality
PO Box 144870
Salt Lake City, UT 84114-4870

Re: Proposed Revisions to R317-2

Dear Mr. Baker:

This letter provides comments of the U.S. EPA Region 8 Water Quality Unit (WQU) on the proposed revisions to R317-2 (Standards of Quality for Waters of the State). Our review addresses the proposal and supporting information included in the public notice of proposed rulemaking published in the November 1, 2011 issue of the Utah State Bulletin (Volume 2011, No. 21). The proposed revisions include modifications to Utah's antidegradation policy, authorizing language for the adoption of site-specific standards, segment specific water quality standards, and new or revised criteria for several pollutants.

Overall, the WQU supports the proposed revisions to R317-2. Our comments are summarized below. Please note that the positions described in our comments, regarding both existing and proposed water quality standards, are preliminary in nature and should not be interpreted as final decisions under CWA § 303(c). The EPA approval/disapproval decisions will be made after adoption of water quality standards revisions and submittal to the EPA, and will consider all pertinent evidence including information submitted during the rulemaking process.

PROPOSED REVISIONS TO ANTIDEGRADATION (R317-2-3)

The Utah Division of Water Quality (UDWQ) proposes several revisions to R317-2-3 including:

- A revised description of temporary and limited for Category 1 waters that references R317-2-3.5.b.4;
- The addition of a temporary and limited provision for Category 2 waters; and
- Deletion of 317-2-3.5.b.1(d).

The proposed revisions to the temporary and limited provisions as they apply to Category 1 and 2 waters are consistent with the *EPA Region 8 Guidance: Antidegradation Implementation* and meet the requirements of 40 CFR § 131.12. Therefore, we are not opposed to the adoption of the revised language.

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The WQU also supports UDWQ's proposal to delete 317-2-3.5.b.1(d). Deletion of this provision will resolve the 2010 disapproval action.[1] If the proposed revisions to R317-2-3 are approved by the Utah Water Quality Board (Board), the WQU will likely recommend approval of the revisions.

PROPOSED REVISIONS TO SITE-SPECIFIC STANDARDS PROVISION (R317-2-7; TABLE 2.14.1 & 2.14.2)

The UDWQ proposes revisions to R317-2-7 that will expand the situations where a site-specific standard may be adopted. As currently written, R317-2-7 only identifies TDS and temperature for the consideration of site-specific standards. There is no reason to limit site-specific standards to these two parameters. The EPA has identified several methods for developing site-specific standards that can be used for a wide variety of pollutants.[2] The proposed revisions remove the parameter specificity and allow for site-specific standards under the following two conditions: 1) where site-specific data or analyses indicate that the existing criterion is more or less stringent than necessary to protect the designated use or 2) where natural, human induced unalterable conditions or other factors identified by 40 CFR 131.10(g)[3] prevent attainment of the statewide criterion. Adoption of the proposed language will provide Utah the authority to develop and adopt site-specific standards with scientifically defensible methods for waterbodies where the state-wide standards are not appropriate.

PROPOSED REVISIONS TO INDIVIDUAL WATERBODIES (R317-2-12 & R317-2-13)

The UDWQ's proposal includes revisions to the antidegradation classification, use designations, and segment descriptions for several waterbodies. See Enclosure 1 for a complete list of the proposed revisions to individual waterbodies. Most of the proposed revisions are nonsubstantive changes and would not change the level of water quality protection; however, a few of the revisions upgrade and/or clarify the designated uses for water bodies that were previously unclassified (i.e., Red Butte Creek, Emigration Creek, Big East Lake, and Sand Hollow Reservoir) and other proposed revisions will upgrade the recreation use designation from 2B to 2A (i.e., Fremont and Ogden rivers) to better protect the existing recreation use. We commend the UDWQ for revising the use designations to better reflect the existing uses. Assigning correct designated uses is a necessary first step to establishing appropriate water quality standards for a particular waterbody. If adopted by the Board, these revisions will provide better protection to these aquatic resources.

PROPOSED REVISIONS TO NUMERIC CRITERIA (R317-2-14)

Table 2-14-1 - Site Specific Standards for Total Dissolved Solids

In its 2010 action letter, the EPA disapproved a revised segment description that relaxed the TDS criterion from 1,200 mg/L to 3,000 mg/L for a portion of the Price River and tributaries since no data or rationale were provided to support the application of the relaxed criterion. It is our understanding that the section of the Price River where the criterion was relaxed (from the confluence with Coal Creek to the confluence with Soldier Creek and tributaries) was accidentally excluded from the original site-specific TDS criteria proposal that was adopted by the Board. This resulted in a small segment of the

[1] EPA disapproved 317-2-3.5.b.1(d) in its action letter dated August 24, 2010.
[2] *Water Quality Standard Handbook: Second Edition*. EPA-823-B-94005a
[3] 40 CFR 131.10(g) identifies six factors that a state may use to justify removal of a designated use that is not an existing use. Although this section of the regulation is specific to use removal, it also generally supports adoption of site-specific water quality standards based on pollutant concentrations that are feasible to attain.

Price River with the state-wide criterion of 1,200 µg/L, which was sandwiched between two segments with site-specific TDS criteria of 1,700 mg/L and 3,000 mg/L.

To address the 2010 disapproval, the UDWQ proposes to move the segment boundary where the 3,000 mg/L criterion ends and the 1,700 mg/L site-specific criterion begins upstream from the confluence with Coal Creek to the confluence with Soldier Creek. This revision to the segment description would apply the more stringent 1,700 mg/L site-specific TDS criterion up to the confluence with Soldier Creek. The WQU has reviewed the information and data provided in the total maximum daily load (TMDL) and has determined that it is reasonable to apply of the 1,700 mg/L criterion to this section of the Price River. The 1,700 mg/L criterion is an attainability-based value that accounts for the load reductions that would occur if non-point source best management practices (BMP) are implemented in the watershed. It is our understanding that no water quality data specific to this reach of the Price River are available; therefore, the WQU believes it is reasonable to revise the segment description so that the more stringent site-specific criterion is applied to this section of the Price River. If the Board were to adopt the proposed revision to the segment description, the WQU would likely recommend approval; however, as new water quality data and information on the highest attainable water quality become available and BMPs are implemented in the watershed, UDWQ should reevaluate the site-specific standards adopted for this segment and other segments in the Price River watershed to determine if the standards should be revised (as required by 40 CFR § 131.20(a)).

Table 2-14-2 Numeric Criteria for Aquatic Wildlife

UDWQ proposes the following revisions Table 2.14.2:

- Deletion of the acute mercury criterion; and
- Addition of acute and chronic criteria for tributyltin, acrolein, and chloropyrifos.

The WQU supports the proposal to delete the existing acute mercury criterion of 2.4 µg/L, leaving only the chronic mercury criterion of 0.012 µg/L in place. The existing acute criterion is inconsistent with the existing CWA § 304(a) recommendation for mercury of 1.4 µg/L (1995 Updates; EPA-820-B-96-001). Furthermore, and more importantly, the acute criterion only accounts for aquatic life effects resulting from water column exposure. It does not reflect the importance of exposure via the food pathway and for that reason it is significantly underprotective and not a useful criterion.

The WQU commends the UDWQ for proposing to add the EPA recommended 304(a) criteria for tributyltin, acrolein, and chloropyrifos to Utah's numeric criteria for aquatic wildlife use protection.

Table 2-14-2 List of Human Health Criteria

UDWQ proposes to update the existing acrolein and phenol human health criteria to the following:

	Existing Criteria (µg/L)		**Proposed Criteria (µg/L)**	
Parameter	**Water & Organisms**	**Organisms Only**	**Water & Organisms**	**Organisms Only**
Acrolein	190	290	6	9
Phenol	21,000	1,700,000	10,000	860,000

The EPA recently published updates to its acrolein and phenol water quality criteria for protection of human health (74 Fed. Reg. 27535, 27536, June 10, 2009). The EPA revised the human health water

quality criteria based on the Agency's 2000 Human Health Methodology (EPA-822-B-00-004). This methodology incorporates significant scientific advances made in the last two decades, particularly in the areas of cancer and noncancer risk assessments, exposure assessments, and methodologies to estimate bioaccumulation in fish. The updated water quality criteria integrate new reference doses for acrolein and phenol that have been added to the Agency's Integrated Risk Information System. The proposed values are also consistent with EPA's current CWA Section 304(a) criteria recommendations. The WQU supports adoption of the updated criteria.

OTHER COMMENTS

- There appears to be a typo in R317-2-12.1.a, where Category 2 is changed to Category 3. Earlier drafts of the proposed revisions included a proposal to align the numbering of Utah's antidegradation Categories with the EPA's Tiers; however, this proposal did not make it into the final proposal that was noticed for public comment. It appears that one revision was not changed back to its original number.
- The UDWQ may want to consider using "tributyltin" instead of "tributyl tin" since it is more commonly spelled without the space.

CONCLUSION

We hope these comments are helpful to the UDWQ, the Board, and the parties to this rulemaking. We appreciate the efforts of the UDWQ and the parties to address issues of concern to the EPA. If there are questions concerning our comments, please contact me at (303) 312-6947, or Lareina Guenzel at (303) 312-6610.

Sincerely,

Sandra Spence, Acting Chief
Water Quality Unit

cc: Christopher Bittner

ENCLOSURE 1

SUMMARY OF SITE-SPECIFIC REVISIONS TO ANTIDEGRADATION CLASSIFICATIONS, USE DESIGNATIONS AND SEGMENT DESCRIPTIONS

Antidegradation Classification Revisions

Regulation	Drainage	Waterbody	Rule change and Rationale
R317-2-12.1.a. & R317-2-12.2.b	Weber River	Weber River, from Uintah to Mountain Green	Correct error in previous rulemaking where antidegradation category of this section of the Weber River was the unintentionally changed
R317-2-12.2.b.6	Weber River	Calk Creek and tributaries from ~~U.S. Highway 189~~ Main Street in Coalville to headwaters	Reassign the antidegradation category boundary for Chalk Creek to Main Street in Coalville because of highway name changes.
R317-2-12.2.b.6	Weber River	Weber River and tributaried from ~~U.S. Highway 189~~ Utah State Route 32 near Oakley to headwaters	Reassign the antidegradation category boundary for Weber River to Utah State Route 32 because of highway name changes
R317-2-12.2.b.12	Farmington Bay	Shepard Creek and tributaries from ~~Height~~ Haight Bench Canal diversion to headwaters (Davis County)	Correct typographical error
R317-2-12.2.b.12	Farmington Bay	Farmington Creek and tributaries from ~~Height~~ Haight Bench Canal diversion to headwaters (Davis County)	Correct typographical error

Use Designation and Segment Description Revisions - Rivers, Creeks and Streams

Regulation	Drainage	Waterbody	Rule change and Rationale
R317-2-13.1.a	Upper Colorado River	Fremont River and tributaries, through Capitol Reef National Park to headwaters	Upgrade designated use from 2B to 2A*
R317-2-13.1.b	Green River	Price River and tributaries, from Carbon Canal Diversion at Price City Golf Course to Price city Water ~~Water~~ Treatment Plant intake	Correct typographical error
R317-2-13.1.b	Green River	O-Wi-Yu-Kuts Creek and tributaries, Daggett County	Correct typographical error
R317-2-13.4.a	Weber River	Ogden River and tributaries, from confluence with Weber River to Pineview Dam, except as listed below	Upgrade designated use from 2B to 2A*

ENCLOSURE 1

Regulation	Drainage	Waterbody	Rule change and Rationale
R317-2-13.5.a	Utah Lake-Jordan River	Red Butte Creek and tributaries from Liberty Park pond inlet to Red Butte Reservoir	Assign beneficial uses (2B, 3A and 4) to a previously unclassified reach of Red Butte Creek
R317-2-13.5.a	Utah Lake-Jordan River	Emigration Creek and tributaries, from ~~Foothill Boulevard~~ 1100 East in Salt Lake City to headwaters	Extend lower segment boundary downstream to assign beneficial uses to a section of the creek not previously classified. Add beneficial use of Class 4*
R317-2-13.5.a	Utah Lake-Jordan River	Parley's Creek and tributaries, from 1300 East in Salt Lake City to Mountain Dell Reservoir ~~to headwaters~~	Delete "to headwaters" because they are included in another segment with the same use designations
R317-2-13.6.a	Sevier River	Sevier River and tributaries below U.S. National forest boundary from Gunnison Bend Reservoir to Annabella Diversion except ~~except~~ as listed below	Correct typographical error

Use Designation Revisions: Lakes and Reservoirs

Regulation	County	Waterbody	Rule change and Rationale*
R317-2-13.12.b	Box Elder	Willard Bay Reservoir	Delete 2B – Retain 2A
R317-2-13.12.c	Cache	Hyrum Reservoir	Delete 2B – Retain 2A Delete "**" since not site-specific temperature standard has been promulgated
R317-2-13.12.e	Daggett	Flaming Gorge Reservoir (Utah portion)	Delete 2B – Retain 2A
R317-2-13.12.g	Duchesne	Moon Lake	Delete 2B – Retain 2A
R317-2-13.12.g	Duchesne	Scout Lake	Delete 2B – Retain 2A
R317-2-13.12.g	Duchesne	Starvation Reservoir	Delete 2B – Retain 2A
R317-2-13.12.h	Emery	Huntington North Reservoir	Delete 2B – Retain 2A
R317-2-13.12.h	Emery	Joe's Valley Reservoir	Delete 2B – Retain 2A
R317-2-13.12.h	Emery	Millsite Reservoir	Delete 2B – Retain 2A
R317-2-13.12.k	Juab	Sevier Bridge (Yuba) Reservoir	Delete 2B – Retain 2A
R317-2-13.12.n	Morgan	East Canyon Reservoir	Delete 2B – Retain 2A
R317-2-13.12.p	Rich	Bear Lake (Utah portion)	Delete 2B – Retain 2A
R317-2-13.12.r	San Juan	Lake Powell (Utah portion)	Delete 2B – Retain 2A
R317-2-13.12.s	Sanpete	Palisade Reservoir	Delete 2B – Retain 2A
R317-2-13.12.u	Summit	Echo Reservoir	Delete 2B – Retain 2A
R317-2-13.12.u	Summit	Lyman Lake	Delete 2B – Retain 2A

ENCLOSURE 1

Regulation	County	Waterbody	Rule change and Rationale*
R317-2-13.12.u	Summit	Rockport Reservoir	Delete 2B – Retain 2A
R317-2-13.12.w	Uintah	Red Fleet Reservoir	Delete 2B – Retain 2A
R317-2-13.12.w	Uintah	Steinaker Reservoir	Delete 2B – Retain 2A
R317-2-13.12.x	Utah	Big East Lake	Assign beneficial uses (2B, 3A, 4) to a waterbody that was not previously classified
R317-2-13.12.y	Wasatch	Deer Creek Reservoir	Delete 2B – Retain 2A
R317-2-13.12.z	Washington	Sand Hollow Reservoir	Assign beneficial uses (1, 2A, 3B, 4) to a waterbody that was not previously classified

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

Attachment 2
Utah Water Quality Board Meeting, January 25, 2012
Mark-Up of R317-2

Deletions: Strikeout and brackets
Additions: Underline
Green Highlighting: Additional changes proposed January 2012
Yellow highlighting: Changes proposed September 2011 Board Meeting

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 Executive Secretary 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

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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 Executive Secretary will incorporate appropriate changes and return to the Water Quality Board to petition for formal adoption of the proposed changes following the Division of Administrative Rules' rulemaking procedures.

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 Board, 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 Regulations 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.

~~Projects such as, but not limited to, construction of dams or roads will be considered~~ Discharges may be allowed where pollution will be temporary and limited after consideration of the factors

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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 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 Executive Secretary 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

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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

~~(d) a new or renewed UPDES permit is being issued, and water quality-based effluent limits are not required for a specific pollutant because it has been determined that the discharge will not cause, have reasonable potential to cause, or contribute to an exceedance of a State water quality standard for the pollutant~~

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 permits, CWA Section 404 nationwide and 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. The 404 nationwide permits decision will be made at the time of permit issuance, as part of the Division's water quality certification under CWA Section 401. Where it is determined that the category of activities will result in temporary and limited effects, subsequent individual activities authorized under such permits will not be subject to further antidegradation review.

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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 Division of Water Quality 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 Executive Secretary 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 Executive Secretary 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.

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. Special Procedures for 404 Permits.

For 404 permitted activities, all appropriate alternatives to avoid and minimize degradation should be evaluated. Activities involving a discharge of dredged or fill materials that are considered to have more than minor adverse affects on the aquatic environment are regulated by individual CWA Section 404 permits. The decision-making process relative to the 404 permitting program is contained in the 404(b)(1) guidelines (40 CFR Part 230). Prior to issuing a permit under the 404(b)(1) guidelines, the Corps of Engineers:

(a) makes a determination that the proposed activity discharges are unavoidable (i.e., necessary):

(b) examines alternatives to the proposed activity and authorize only the least damaging practicable alternative; and

(c) requires mitigation for all impacts associated with the activity. A 404(b)(1) finding document is produced as a result of this procedure and is the basis for the permit decision. Public participation is provided for in the process. Because the 404(b)(1) guidelines contains an alternatives analysis, the executive secretary will not require development of a separate alternatives analysis for the anti-degradation review. The division will use the analysis in the 404(b)(1) finding document in completing its anti-degradation review and 401 certification.

4. 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.

5. 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 Executive Secretary to authorize proposed activities that would otherwise not be authorized.

6. 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.

7. 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.

8. 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 Division 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 Executive Secretary 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 Executive Secretary 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 Executive Secretary 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. Where possible, public notice on the antidegradation review conclusions will be combined with the public notice on the proposed permitting 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 will 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.

f. Implementation Procedures

The Executive Secretary 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 Executive Secretary 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 regulations 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, ~~and~~2008, and 2011 ~~R~~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

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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

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 regulations 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. 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. ~~The Board may allow site specific modifications based upon bioassay or other tests performed in accordance with standard procedures determined by the Board. Site-specific criterion may be developed based on bioassay or other tests performed in accordance with standard procedures determined by the Board by rulemaking~~ Site-specific criterion 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 criterion.

7.2 Narrative Standards

It shall be unlawful, and a violation of these regulations, 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.

R317-2-8. Protection of Downstream Uses.

All actions to control waste discharges under these regulations 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 Utah Division of Water Quality 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 regulations shall be conducted in accordance with standard procedures specified by the Utah Division of Water Quality.

R317-2-11. Public Participation.

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.

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 [3]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

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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 ~~U.S. Highway 189~~ Main Street in Coalville to headwaters.

Weber River and tributaries, from ~~U.S. Highway 189~~ 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 ~~Height~~ Haight Bench diversion to headwaters (Davis County).

Farmington Creek and tributaries, from ~~Height~~ 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.

~~b. Weber River Drainage~~

~~Weber River from Uintah to Mountain Green.~~

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

a. Colorado River Drainage

13.1 Upper Colorado River Basin

TABLE

Paria River and tributaries, from state line to headwaters	2B	3C	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
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
Fremont 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 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 ~~2B~~	3A	4
Muddy Creek and tributaries, from confluence with Fremont River to Highway U-10 crossing, except as listed below		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
Muddy Creek and tributaries, from Highway U-10 crossing to headwaters	1C	2B 3A		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
Verdure Creek and tributaries, from Highway US-191 crossing to headwaters		2B 3A		4

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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
Spring Creek and tributaries, from confluence with Vega Creek to headwaters			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
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
Mill Creek and tributaries, from confluence with Colorado River to headwaters	1C		2B	3A	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
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
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

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
San Rafael River and tributaries, from confluence with Green River to confluence with Ferron 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
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
Cottonwood Creek and tributaries, from confluence with Huntington Creek to Highway U-57 crossing		2B	3C	4
Cottonwood Creek and tributaries, from Highway U-57 crossing to headwaters	1C	2B 3A		4

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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 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 ~~Water~~ Treatment Plant intake.		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 Range Creek Ranch to headwaters	1C	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
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

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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
Duchesne River and tributaries, from confluence with Green River to Myton Water Treatment Plant intake, except as listed below		2B	3B	4
Uinta River and tributaries, From confluence with Duchesne River to Highway US-40 crossing		2B	3B	4
Uinta River and tributaries, From Highway US-4- crossing 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
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 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
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
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
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
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
Sears Creek and tributaries, Daggett County		2B	3A		
Tolivers Creek and tributaries, Daggett County		2B	3A		
Red Creek and tributaries, from confluence with Green River to state line		2B		3C	4
Jackson Creek and tributaries, Daggett County		2B	3A		
Davenport Creek and					

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tributaries, Daggett County		2B	3A		
Goslin Creek and tributaries, Daggett County		2B	3A		
Gorge Creek and tributaries, Daggett County		2B	3A		
Beaver Creek and tributaries, Daggett County		2B	3A		
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
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
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
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
Leed's Creek, from confluence					

4.32

with Quail Creek to headwaters		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 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
North Fork Virgin River and tributaries	1C 2A	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
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 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

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
Box Elder Creek from confluence with Black Slough to Brigham City Reservoir (the Mayor's Pond)	2B	3C		4
Box Elder Creek, from Brigham City Reservoir (the Mayor's Pond) to headwaters	2B 3A			4
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		
Little Bear 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
Newton Creek and tributaries, from Cutler Reservoir to Newton Reservoir	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

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
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

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
Four Mile Creek from I-15 To headwaters		2B	3A		4
Weber River and tributaries, from Slaterville diversion to Stoddard					

4.35

diversion, except as listed below		2B	3A		4
Ogden River and tributaries, From confluence with Weber River To Pineview Dam, except as listed Below		2A ~~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
Strongs Canyon Creek and 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, From U.S. National Forest Boundary 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
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
Surplus Canal from Great Salt					

4.36

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 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 City Creek Water Treatment Plant to headwaters	1C	2B 3A				
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	1C	2B 3A				
Emigration Creek and tributaries, from ~~Foothill Boulevard~~ 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 ~~to headwaters~~	1C	2B 3A				
Parley's 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		2B		3C		4
Mill Creek (Salt Lake County) and tributaries from Interstate Highway 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

4.37

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 Metropolitan Water Treatment Plant to headwaters	1C	2B 3A		
Bell Canyon Creek and tributaries, from lower Bell's Canyon reservoir 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
Kersey Creek from confluence of C-7 Ditch to headwaters		2B	3D	

* Site specific criteria for dissolved oxygen. See Table 2.14.5.

b. Provo River Drainage

TABLE

4.38

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
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
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 tributaries, from Utah Lake to headwaters		2B 3B	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 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
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
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
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 Highway-US 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 diversion at Moark Junction to headwaters	2B	3A				4

4.40

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
Salt Creek, from Nephi diversion to headwaters	2B	3A		4
Currant Creek, from mouth of Goshen Canyon to Mona Reservoir	2B	3A		4
Burriston Creek, from Mona Reservoir 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
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
Beaver River and tributaries from Minersville City to headwaters	2B	3A		4
Little Creek and tributaries, From irrigation diversion to Headwaters	2B	3A		4
Pinto Creek and tributaries,				

4.41

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
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 ~~except~~ as listed below 4		2B	3B
Oak Creek and tributaries, Millard County	2B 3A		4
Round Valley Creek and tributaries, Millard County	2B 3A		4
Judd Creek and tributaries, Juab County	2B 3A		4
Meadow Creek and tributaries, Juab County	2B 3A		4
Cherry Creek and tributaries Juab County	2B 3A		4
Tanner Creek and tributaries, Juab County	2B		3E 4

4.42

Baker Hot Springs, Juab County	2B		3D	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
Twelve Mile Creek (South Creek) and tributaries, from U.S. Forest Service 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
Ephraim Creek (Cottonwood Creek) and tributaries, from U.S. Forest Service to headwaters	2B 3A			4
Oak Creek and tributaries, from U.S. Forest Service 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
San Pitch River and tributaries, from Highway U-132 crossing to headwaters	2B 3A			4
Tributaries to Sevier River from Gunnison Bend Reservoir to Annabelle Diversion from U.S. National Forest boundary 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
Little Creek and tributaries, from irrigation diversion 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

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,			

4:44

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
Blue Creek and tributaries, from Great Salt Lake to Blue Creek Reservoir		2B		3D	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
Donner Creek and tributaries, from irrigation diversion to Utah-Nevada state line		2B	3A		4
Bettridge Creek and tributaries, from irrigation diversion to Utah-Nevada state line		2B	3A		4
North Willow Creek and tributaries, Tooele County		2B	3A		4
South Willow Creek and tributaries, Tooele County		2B	3A		4
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

4.45

Soldier Creek and Tributaries from the Drinking Water Treatment Facility 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
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
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
Cold Spring, Juab County		2B	3C 3D	
Cane Spring, Juab County		2B	3C 3D	
Lake Creek, from Garrison (Pruess) Reservoir to Nevada				

4.46

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
Indian Creek and tributaries, Beaver County, from Indian Creek Reservoir to headwaters		2B	3A			4
Shoal Creek and tributaries, Iron County		2B	3A			4

b. Farmington Bay Drainage

TABLE

Corbett Creek and tributaries, from Highway to headwaters		2B	3A			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 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 Interstate Highway 15 to Highway US-89		2B	3B		4
Baer Creek and tributaries, from 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
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
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
Lone Pine Creek and tributaries, from Highway US-89 to headwaters		2B	3A		4
Ricks Creek and tributaries, from Highway I-15 to headwaters	1C	2B	3A		4
Barnard Creek and tributaries,					

4.48

from Highway US-89 to headwaters		2B 3A		4
Parrish Creek and tributaries, from Davis Aqueduct to headwaters		2B 3A		4
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		2B 3A		4
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		2B 3A		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
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
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
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
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
Pole Creek and tributaries, from state line to headwaters	2B 3A	4
Goose Creek and tributaries	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

4.50

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	
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
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		

4.52

Three Creeks Reservoir			2B	3A		4

b. Box Elder County

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	~~2B~~	3B	3D	4

c. Cache County

TABLE

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

Comment [C1]: These asterisks are strikethrough

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						

4.53

portion)	1C	2A	~~2B~~	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
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
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

4.55

Mirror Lake	2B 3A	4
Mohawk Lake	2B 3A	4
Moon Lake	1C 2A ~~2B~~ 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 ~~2B~~ 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 ~~2B~~ 3A	4
Spider Lake	2B 3A	4
Spirit Lake	2B 3A	4
Starvation Reservoir	1C 2A ~~2B~~ 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

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	2B	3A		4
Millsite Reservoir	1C	2A	2B	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

4.57

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	~~2B~~	3B		4

l. Kane County

TABLE

Navajo Lake		2B	3A		4

m. Millard County

TABLE

DMAD Reservoir		2B	3B		4
Fools Creek Reservoir		2B		3C 3D	4

4.58

Garrison Reservoir (Pruess Lake)			2B	3B		4
Gunnison Bend Reservoir			2B	3B		4

n. Morgan County

TABLE

East Canyon Reservoir	1C	2A	~~2B~~	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	~~2B~~	3A		4
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	~~2B~~		3B	4
Lloyd's Lake	1C		2B	3A		4
Monticello Lake			2B	3A		4
Recapture Reservoir			2B	3A		4

s. Sanpete County

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	~~2B~~	3A		4
Rolfson Reservoir			2B		3C	4
Twin Lakes			2B	3A		4
Willow Lake			2B	3A		4

t. Sevier County

4.60

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
East Red Castle Lake	2B 3A	4
Echo Reservoir	1C 2A ~~2B~~ 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 ~~2B~~ 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

4.62

Rockport Reservoir	1C	2A	2B 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

4.63

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	~~2B~~	3A	4
Steinaker Reservoir	1C	2A	~~2B~~	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

4.64

Tibble Fork Resevoir			2B	3A		4
Utah Lake			2B	3B	3D	4

y. Wasatch County

TABLE

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

z. Washington County

TABLE

Baker Dam Reservoir			2B	3A		4
Gunlock Reservoir	1C	2A	~~2B~~	3B		4
Ivins Reservoir			2B	3B		4
Kolob Reservoir			2B	3A		4
Lower Enterprise Reservoir			2B	3A		4
Quail Creek Reservoir	1C	2A	~~2B~~	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 ~~2B~~ 3A**	4

** Denotes site-specific temperature, see Table 2.14.2 Notes

13.13 Unclassified Waters

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	Recreation and Aesthetics		Agri-culture
	1C	2A	2B	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			

4.66

Selenium	0.05		0.05
Silver	0.05		
INORGANICS (MAXIMUM MG/L)			
Bromate	0.01		
Boron			0.75
Chlorite	<1.0		
Fluoride (3)	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	Radium 226, 228	
	5		
Strontium 90	8		
Tritium	20000		
Uranium	30		
ORGANICS (MAXIMUM UG/L)			
Chlorophenoxy Herbicides			
2,4-D	70		
2,4,5-TP	10		
Methoxychlor	40		

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

(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) Maximum concentration varies according to the daily maximum mean air temperature.

TEMP (C)	MG/L
12.0	2.4

4.67

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) Reserved ~~Site-specific criteria for total dissolved solids may be adopted by rulemaking where it is demonstrated that: (a) a less stringent criterion is appropriate because of natural or un-alterable conditions; or (b) a less stringent, site-specific criterion and/or date-specified criterion is protective of existing and attainable agricultural uses; or (c) a more stringent criterion is attainable and necessary for the protection of sensitive crops.~~
~~For water quality assessment purposes, up to 10% of representative samples may exceed the standard.~~

SITE SPECIFIC STANDARDS FOR TOTAL DISSOLVED SOLIDS (TDS)

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 I-57:
3,500 mg/l;

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

Huntington Creek and tributaries from the confluence with Cottonwood
Creek to 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 U10: 2,600 mg/l;

Lost Creek from the confluence with Sevier River to U.S. Forest Service Boundary: 4,600 mg/l;

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

4.68

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 U-119 Crossing: 9,700 mg/l;

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

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

Quitchupah Creek from the confluence with Ivie Creek to 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 Lake: 3,370 mg/l;

South Fork Spring Creek from confluence with Pelican Pond
Slough Stream to US 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.

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
Arsenic (Trivalent)				
4 Day Average	150	150	150	150
1 Hour Average	340	340	340	340
Cadmium (7)				
4 Day Average	0.25	0.25	0.25	0.25
1 Hour Average	2.0	2.0	2.0	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
~~1 Hour Average~~	~~2.4~~	~~2.4~~	~~2.4~~	~~2.4~~
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

4.71

1 Hour Average	18.4	18.4	18.4	18.4	
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	1.6	1.6	1.6	
~~(Tributyl Tin)~~ 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 (13) (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)					
Gross Alpha (10)	15	15	15	15	
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	
Chlordane					
4 Day Average	0.0043	0.0043	0.0043	0.0043	
1 Hour Average	1.2	1.2	1.2	1.2	

4.72

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'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 (11)				
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 Executive Secretary 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 Executive Secretary will inform the Water Quality Board of any protocols or guidelines that are developed.

(3) ~~The temperature standard shall be at background where it can be shown that natural or un-alterable conditions prevent its attainment. In such cases rulemaking will be undertaken to modify the standard accordingly.~~

Site Specific Standards for Temperature

Ken'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

(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/l 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 Division, 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

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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 division 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) Formula to convert dissolved sulfide to un-disassociated hydrogen sulfide is: H_2S = Dissolved Sulfide * $e^{((-1.92 + pH) + 12.05)}$

(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

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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
Temperature, C

pH	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	9.37	9.37	8.79	8.24	7.72	7.24	6.36
6.7	10.5	9.99	9.20	8.62	8.08	7.58	7.11	6.66	5.86
6.8	10.2	9.81	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
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	.694	0.651	0.610	0.572	0.536	0.503	0.442

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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	1.71	1.50	1.32	1.16	1.02	0.897
8.1	0.68	1.47	1.29	1.14	1.00	0.879	0.733
8.2	0.43	1.26	1.11	0.073	0.855	0.752	0.661
8.3	0.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	0.03	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

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	$CF * e^{(0.7409 (\ln(hardness)) -4.719}$
	$CF = 1.101672 - \ln(hardness) (0.041838)$
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	$CF * e^{(1.273(\ln(hardness))-4.705)}$

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$CF = 1.46203 - \ln(hardness)(0.145712)$

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	$CF * e^{(1.0166(\ln(hardness))-3.924)}$ $CF = 1.136672 - \ln(hardness)(0.041838)$
CHROMIUM (III)	$CF * e^{(0.8190(\ln(hardness))+3.7256)}$ $CF = 0.316$
COPPER	$CF * e^{(0.9422(\ln(hardness))-1.700)}$ $CF = 0.960$
LEAD	$CF * e^{(1.273(\ln(hardness))-1.460)}$ $CF = 1.46203 - \ln(hardness)(0.145712)$
NICKEL	$CF * e^{(0.8460(\ln(hardness))+2.255}$ $CF= 0.998$
SILVER	$CF * e^{(1.72(\ln(hardness))-6.59}$ $CF = 0.85$
ZINC	$CF * e^{(0.8473(\ln(hardness))+0.884}$ $CF = 0.978$

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

TABLE 2.14.6
LIST OF HUMAN HEALTH CRITERIA (CONSUMPTION)

Chemical Parameter	Water and Organism (ug/L) Class 1C	Organism Only (ug/L) Class 3A,3B,3C,3D
Antimony	5.6	640
Arsenic	A	A
Beryllium	C	C
Cadmium	C	C
Chromium III	C	C
Chromium VI	C	C
Copper	1,300	
Lead	C	C
Mercury	A	A
Nickel	100 MCL	4,600
Selenium	A	4,200
Silver		
Thallium	0.24	0.47
Zinc	7,400	26,000
Cyanide	140	140
Asbestos	7 million Fibers/L	
2,3,7,8-TCDD Dioxin	5.0 E -9 B	5.1 E-9 B
Acrolein	~~1906.0~~	~~2909.0~~
Acrylonitrile	0.051 B	0.25 B
Alachlor	2.0	
Atrazine	3.0	
Benzene	2.2 B	51 B
Bromoform	4.3 B	140 B
Carbofuran	40	

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Carbon Tetrachloride	0.23 B	1.6 B
Chlorobenzene	100 MCL	1,600
Chlorodibromomethane	0.40 B	13 B
Chloroethane		
2-Chloroethylvinyl Ether		
Chloroform	5.7 B	470 B
Dalapon	200	
Di(2ethylhexl)adipate	400	
Dibromochloropropane	0.2	
Dichlorobromomethane	0.55 B	17 B
1,1-Dichloroethane		
1,2-Dichloroethane	0.38 B	37 B
1,1-Dichloroethylene	7 MCL	7,100
Dichloroethylene (cis-1,2)	70	
Dinoseb	7.0	
Diquat	20	
1,2-Dichloropropane	0.50 B	15 B
1,3-Dichloropropene	0.34	21
Endothall	100	
Ethylbenzene	530	2,100
Ethylene Dibromide	0.05	
Glyphosate	700	
Haloacetic acids	60 E	
Methyl Bromide	47	1,500
Methyl Chloride	F	F
Methylene Chloride	4.6 B	590 B
Ocamyl (vidate)	200	
Picloram	500	
Simazine	4	
Styrene	100	
1,1,2,2-Tetrachloroethane	0.17 B	4.0 B
Tetrachloroethylene	0.69 B	3.3 B
Toluene	1,000	15,000
1,2 -Trans-Dichloroethylene	100 MCL	10,000
1,1,1-Trichloroethane	200 MCL	F
1,1,2-Trichloroethane	0.59 B	16 B
Trichloroethylene	2.5 B	30 B
Vinyl Chloride	0.025	2.4
Xylenes	10,000	
2-Chlorophenol	81	150
2,4-Dichlorophenol	77	290
2,4-Dimethylphenol	380	850
2-Methyl-4,6-Dinitrophenol	13.0	280
2,4-Dinitrophenol	69	5,300
2-Nitrophenol		
4-Nitrophenol		
3-Methyl-4-Chlorophenol		
Penetachlorophenol	0.27 B	3.0 B
Phenol	~~21000~~ 10,4000	~~1,700,000~~ 860,000
2,4,6-Trichlorophenol	1.4 B	2.4 B

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Acenaphthene	670		990
Acenaphthylene			
Anthracene	8,300		40,000
Benzidine	0.000086 B		0.00020 B
BenzoaAnthracene	0.0038 B		0.018 B
BenzoaPyrene	0.0038 B		0.018 B
BenzobFluoranthene	0.0038 B		0.018 B
BenzoghiPerylene			
BenzokFluoranthene	0.0038 B		0.018 B
Bis2-ChloroethoxyMethane			
Bis2-ChloroethylEther	0.030 B		0.53 B
Bis2-ChloroisopropylEther	1,400		65,000
Bis2-EthylhexylPhthalate	1.2 B		2.2 B
4-Bromophenyl Phenyl Ether			
Butylbenzyl Phthalate	1,500		1,900
2-Chloronaphthalene	1,000		1,600
4-Chlorophenyl Phenyl Ether			
Chrysene	0.0038 B		0.018 B
Dibenzoa,hAnthracene	0.0038 B		0.018 B
1,2-Dichlorobenzene	420		1,300
1,3-Dichlorobenzene	320		960
1,4-Dichlorobenzene	63		190
3,3-Dichlorobenzidine	0.021 B		0.028 B
Diethyl Phthalate	17,000		44,000
Dimethyl Phthalate	270,000		1,100,000
Di-n-Butyl Phthalate	2,000		4,500
2,4-Dinitrotoluene	0.11 B		3.4 B
2,6-Dinitrotoluene			
Di-n-Octyl Phthalate			
1,2-Diphenylhydrazine	0.036 B		0.20 B
Fluoranthene	130	140	
Fluorene	1,100		5,300
Hexachlorobenzene	0.00028 B		0.00029 B
Hexachlorobutedine	0.44 B		18 B
Hexachloroethane	1.4 B		3.3 B
Hexachlorocyclopentadiene	40		1,100
Ideno 1,2,3-cdPyrene	0.0038 B		0.018 B
Isophorone	35 B		960 B
Naphthalene			
Nitrobenzene	17		690
N-Nitrosodimethylamine	0.00069 B		3.0 B
N-Nitrosodi-n-Propylamine	0.005 B		0.51 B
N-Nitrosodiphenylamine	3.3 B		6.0 B
Phenanthrene			
Pyrene	830		4,000
1,2,4-Trichlorobenzene	35		70
Aldrin	0.000049 B		0.000050 B
alpha-BHC	0.0026 B		0.0049 B
beta-BHC	0.0091 B		0.017 B
gamma-BHC (Lindane)	0.2 MCL		1.8

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delta-BHC		
Chlordane	0.00080 B	0.00081 B
4,4-DDT	0.00022 B	0.00022 B
4,4-DDE	0.00022 B	0.00022 B
4,4-DDD	0.00031 B	0.00031 B
Dieldrin	0.000052 B	0.000054 B
alpha-Endosulfan	62	89
beta-Endosulfan	62	89
Endosulfan Sulfate	62	89
Endrin	0.059	0.060
Endrin Aldehyde	0.29	0.30
Heptachlor	0.000079 B	0.000079 B
Heptachlor Epoxide	0.000039 B	0.000039 B
Polychlorinated Biphenyls PCB's	0.000064 B,D	0.000064 B,D
Toxaphene	0.00028 B	0.00028 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: April 1, 2010
Notice of Continuation: October 2, 2007
Authorizing, and Implemented or Interpreted Law: 19-5

BEFORE THE
UTAH WATER QUALITY BOARD

IN THE MATTER OF REVISING STATE WATER QUALITY STANDARDS (*R317-2, UTAH ADMINISTRATIVE CODE*)	ORDER

This matter came for hearing before the Utah Water Quality Board pursuant to notice given under the provisions of *Sections 19-5-110, Utah Code Annotated*, 1953, as amended, on the 28th day of September, 2011 in room 1015 of the Utah Department of Environmental Quality, Salt Lake City, Utah, for the purpose of considering revisions to *R317-2, Utah Administrative Code*, "Standards of Quality for Waters of the State."

The Board having taken cognizance of the oral and written statements received, and having fully considered all of the facts in this matter, it is therefore ORDERED that the revised "Standards of Quality for Waters of the State" (*R317-2, UAC*) be reissued effective April 1, 2012 with the changes as adopted by the Board on January 25, 2012.

Dated this 25th day of January, 2012

Paula Doughty, Chairperson
Utah Water Quality Board

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