

**STATEMENT OF BASIS  
REVISIONS TO ARSD 74:51:01, 74:51:02, 74:51:03  
SURFACE WATER QUALITY PROGRAM**

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## **1.0 Background**

Under South Dakota Codified Law (SDCL) 34A-2-17 and the federal Water Quality Standards Regulations at 40 CFR 131.20, states are required to review their water quality standards at least once every three years. The Water Management Board will review the existing water quality standards, and if appropriate, will modify existing standards or adopt new standards.

Proposed changes included in this triennial review include new definitions, the modification of existing definitions, updates to references, clarifying language, corrections to punctuation, adding low flow periods when water quality standards do not apply in the stream to two beneficial uses, change the monitoring frequency for coldwater fishery waters, adding durations in the special conditions for a number of numeric standards, changes to the dissolved oxygen criteria, change to the pH criteria, site specific total suspended solids criteria for the Little White and White Rivers, update toxic pollutants criteria, and review, remove and add beneficial uses to lakes and streams

## **2.0 Chapter 74:51:01 – Surface Water Quality Standards**

### **2.1 § :01- Definitions.**

(23) “Epilimnion” – This definition is being added due to its use in § 74:51:01:45 - § 74:51:01:51. This specifies where the dissolved oxygen criterion is applicable in a thermally stratified waterbody.

(30) “Hypolimnion,” This definition is being added to explain the different layers in a thermally stratified waterbody. It is used in the definition of the “Thermocline”.

(40) "Metalimnion," – This definition is being add due to its use in § 74:51:01:45 - § 74:51:01:51. This specifies where the dissolved oxygen criterion is applicable in a thermally stratified waterbody.

(58) “Surface waters of the state” – This change removes a reference to 40 CFR 423.11(m), which used to apply to cooling ponds but now applies to coal pile runoff. The reference to the federal regulation is not longer pertinent to this definition.

(59) “Thermocline,”- This definition is being added to explain the different layers in a thermally stratified waterbody. It is used in the definition of the “Epilimnion”.

(67) “Waters of the state” - This change removes a reference to 40 CFR 423.11(m), which used to apply to cooling ponds but now applies to coal pile runoff. The reference to the federal regulation is no longer pertinent to this definition.

These changes in definitions will result in a numbering change for definitions 24 to 69.

### **2.2 § :22 – Laboratory procedures for tests.**

This change is to reflect the most recent federal revision of 40 CFR Part 136.

### **2.3 § :23 – Bioassay methods.**

This change is to reflect the most recent federal revision of 40 CFR Part 136.

**2.4 § :30 – Flow rates for low quality fishery irrigation waters.**

The addition of the fish and wildlife propagation, recreation and stock watering use allows this fishery beneficial use to be treated consistently with the other low quality fishery waters.

The irrigation waters use is being added to this section based on the results of a Total Maximum Daily Load study that shows low flow conditions cause conductivity levels to naturally increase to the point that the use cannot be expected to be maintained. By adding this beneficial use to this section, waters will no longer be listed as impaired due to natural limiting conditions. See *Phase I, Watershed Assessment Final Report and TMDL, Medicine Creek, Lyman and Jones Counties, South Dakota. DENR 2005*

([http://www.state.sd.us/denr/DFTA/WatershedProtection/TMDL/TMDL\\_MedicineCreek.pdf](http://www.state.sd.us/denr/DFTA/WatershedProtection/TMDL/TMDL_MedicineCreek.pdf))

**2.5 § :32 – Effluent limits for discharges to coldwater fishery waters.**

The change to a 30-day average for suspended solids and 5-day biochemical oxygen demand makes this section consistent with the National Secondary Wastewater Treatment Standards.

Because South Dakota has primacy for issuing surface water discharge permits, the recommendation is that the reference to the national pollutant discharge elimination system be replaced with surface water discharge to reflect South Dakota's authority over this program.

**2.6 § :44 – Criteria for domestic water supply waters.**

These changes clarify that the criteria for nitrates, barium, fluoride, and total petroleum hydrocarbons are daily maximums.

**2.7 § :45 – Criteria for coldwater permanent fish life propagation waters.**

Dissolved oxygen

SD DENR is recommending revisions to the language specifying implementation of Dissolved Oxygen (DO) criteria. These revisions include:

- adding definitions for epilimnion, metalimnion and hypolimnion;
- specifying the DO criteria are implemented as a daily minimum value;
- specifying the DO criteria are in units of milligrams per liter (mg/L); and
- specifying that DO is measured throughout the water column in any non-stratified waterbody and in the epilimnion and metalimnion of a stratified waterbody.

DO is necessary to sustain aquatic life, but can vary significantly in natural aquatic systems. DENR is recommending these revisions to improve understanding of how the DO criteria are used. The revisions provide specifics on how DO criteria are measured, over what timeframes, and how assessment decisions are made to protect aquatic life.

Waterbodies may become thermally-stratified wherein less dense, warmer water rests on top of denser, colder bottom waters. This stratification can essentially isolate the bottom waters from replenishing oxygen supplies at the air-water surface. Without adequate mixing the bottom waters can become relatively stagnant and depleted in dissolved oxygen. The revisions to the dissolved oxygen criteria recognize that oxygen levels are not uniform in waterbodies that do not

mix and subsequently stratify into an upper, warmer area that circulates and a lower, cooler area that does not circulate.

The epilimnion defined as the upper stratum of the water column that is typically uniformly warm, circulating, and well mixed, is the area of a stratified waterbody where wind action and photosynthesis provide for higher concentrations of dissolved oxygen. In larger, deeper waterbodies a middle layer (metalimnion) may also be present. The metalimnion defined as the middle layer in a thermally-stratified waterbody generally encompassing the thermocline, is typically somewhat mixed and influenced by the epilimnion. These zones are where the DO criteria are expected to be met, providing a zone of refuge for aquatic life at all times.

The lower area, the hypolimnion, is typically less well mixed (at times, stagnant), colder than the epilimnion and metalimnion, and often has a uniform temperature. Natural breakdown of organic material can consume much of the available oxygen in the hypolimnion during and after the summer growing season. Because of the nature of the hypolimnion, the dissolved oxygen criterion is not expected to be maintained in the hypolimnion of a thermally-stratified waterbody at all times. EPA's criteria document (Ambient Water Quality Criteria for Dissolved Oxygen, 1986, p. 28) states:

*“Naturally-occurring dissolved oxygen concentrations may occasionally fall below target criteria levels ... [representing] the natural productivity under the particular set of natural conditions.”*

Recognizing there is some scientific uncertainty in setting criteria, DENR makes recommendations to the Board of Water Management based on technical analysis of available science. The Department, based on the United States Environmental Protection Agency's 1986 Dissolved Oxygen Criteria document (see Figure 1, p.14,) considers the daily minima to be protective of the fish species found in South Dakota.

See EPA's 1986 criteria document at <http://www.epa.gov/waterscience/criteria/library/goldbook.pdf>.

## pH

The change to the pH criteria is based on EPA's 1986 criteria document. The pH range currently in rule is protective of sensitive marine aquatic life, with marine algae and benthic invertebrates more sensitive than fish to changes in pH. Additionally, with mature and larval oysters more sensitive at the extremes of the pH range of 6.5 – 9.0, the criteria to protect these sensitive organisms was set at 6.6 to 8.6 standard units.

South Dakota lacks a marine environment and the sensitive marine communities that the current pH range is meant to protect. Therefore, it is more appropriate to use the recommended EPA pH range of 6.5 – 9.0 that protects South Dakota's freshwater aquatic life. See the United States Environmental Protection Agency's Gold Book, *Quality Criteria for Water, 1986* (<http://www.epa.gov/waterscience/criteria/library/goldbook.pdf>)

Additional changes include describing the undisassociated hydrogen sulfide as a daily maximum.

## **2.8 § :46 – Criteria for coldwater marginal fish life propagation waters.**

Please see the dissolved oxygen, and pH explanations in Section 2.7.

Additional changes include describing the undisassociated hydrogen sulfide as a daily maximum.

**2.9 § :47 – Criteria for warmwater permanent fish life propagation waters.**

Please see the dissolved oxygen explanation in Section 2.7.

Additional changes include describing the undisassociated hydrogen sulfide as a daily maximum.

**2.10 § :48 – Criteria for warmwater semipermanent fish life propagation waters.**

Please see the dissolved oxygen explanation in Section 2.7.

Additional changes include describing the undisassociated hydrogen sulfide as a daily maximum.

**2.11 § :48.01 – Site specific criteria for semipermanent fish life propagation waters – White River from the Nebraska-South Dakota border to its confluence with the Missouri River and § :48.02 - Site specific criteria for semipermanent fish life propagation waters - Little White River from its confluence with Rosebud Creek to it's confluence with the White River.**

Based on physical habitat classification and analyses of historical discharge and water-quality data the current reaches do not adequately represent the natural conditions in the watershed. Monitoring and assessment data identified three unique reaches on the White River. The breaks for these reaches were determined by geology of the watershed and hydrology of the system. The proposed reaches are as follows: (1) from the Nebraska border to the confluence of Willow Creek 13 river miles north of the gage station identified as the White River near Oglala; (2) Willow Creek to the confluence of the Little White River; and (3) the confluence of the Little White River to the mouth of the river near Oacoma, South Dakota. Current reaches in the Little White River watershed are adequate and do not need adjustment, as they represent geological and hydrological conditions in this watershed.

Long term water quality monitoring and assessment data (1968 through 2008) indicate TSS concentrations in the White and Little White Rivers violate current surface water quality standards based on warmwater semipermanent fish life propagation water criteria. However, based on long-term trend analysis using USGS and SD DENR water quality data, TSS standard violations appear to be relatively constant showing a slight decline over time. The current TSS water-quality standard is unattainable and unreasonable in this system ( $\geq 158$  mg/L). Much of the load is coming from White River Group geology in and around the Badlands National Parks where the geology of the area causes steep-sided bluffs with little to no vegetation. This causes low infiltration rates with high runoff and erosion rates. Sediment composed of White River Group consists of clay, silt and mudstone soils of small particle size that can create suspensions and colloidal dispersions that remain suspended for long periods of time.

Biological data (fisheries and macroinvertebrate) support proposed reach changes and modified total suspended solids concentrations. Based on recent fisheries assessment results (Fryda, 2001), the White River is typical of western South Dakota streams dominated by species that are adapted to the adverse conditions found in this arid region. The report suggests that it is likely the White River's species composition has changed very little from its historic condition, finding

only one nonnative species, the common carp (*Cyprinus carpio*), along with several species of special concern representing a large percentage of the fish community. White River macroinvertebrate data suggest that the Oglala monitoring site had significantly lower TSS concentrations, a Rosgen G-type channel, and habitat more conducive to a diverse benthic community. Whereas, the lower reaches are characterized by higher TSS concentrations, Rosgen F-type channels with shifting sand bottoms, creating extremely poor macroinvertebrate habitat and, in turn, community structure. Macroinvertebrate communities in the White River watershed appear to be driven more by physical habitat and less by TSS concentrations.

Based on physical habitat classification and analyses of historical discharge, water-quality and biological data, three unique reaches were identified on the White River. The breaks for these reaches were determined by geology of the watershed and hydrology of the system. The current criterion of 158 mg/l for TSS is unattainable in the White and Little White River watersheds in South Dakota. Site/reach specific standards for TSS in proposed reaches of the White and Little White Rivers based on a load duration curves developed for the Oglala, Kadoka, Oacoma and the Little White River below White River monitoring sites using the 95<sup>th</sup> percent exceedence concentrations. The proposed site/reach specific TSS concentrations are as follows: (1) 4,525 mg/L TSS from the Nebraska border to the confluence of Willow Creek; (2) 24,300 mg/L TSS from Willow Creek to the confluence of the Little White River; (3) 21,550 mg/L TSS from the confluence of the Little White River to the mouth of the river near Oacoma, South Dakota; and the site/reach specific TSS concentration for the Little White River below White River is 1,733 mg/L TSS from Rosebud Creek to the mouth of the Little White River near Westover, South Dakota. Current and historical data support implantation of these site-specific standards for TSS in each of the proposed reaches of the White and Little White River watersheds, based on the 95<sup>th</sup> percent exceedence level.

See the report for the White and Little White Rivers at <http://www.state.sd.us/denr/denr.html>.

#### **2.12 § :49 – Criteria for warmwater marginal fish life propagation waters.**

Please see the dissolved oxygen explanation in Section 2.7.

Additional changes include describing the undisassociated hydrogen sulfide as a daily maximum.

#### **2.13 § :50 – Criteria for immersion recreation waters.**

##### Dissolved oxygen

This change recognizes that oxygen levels are not uniform in waterbodies that do not mix and subsequently stratify into an upper, warmer area that circulates and a lower, cooler area that does not circulate.

The epilimnion, defined as the upper stratum of more or less uniformly warm, circulating, and fairly turbulent water, is the area of a stratified waterbody where wind action and photosynthesis provide for higher concentrations of dissolved oxygen. This zone is where the dissolved oxygen criterion should be met and maintain an aesthetically pleasing recreational environment.

##### E. coli

E. coli is a species of fecal coliform bacteria that is specific to fecal material from humans and warm-blooded animals.

Fecal coliforms include not only E. coli but also includes a number of other bacterial species including Enterobacter, Klebsiella, Proteus, and Citrobacter to name a few. The problem with the fecal coliform test is that it may or may not indicate fecal contamination, i.e. some of the bacteria in the fecal coliform group can be found naturally occurring in the environment like on plants or in the soil.

E. coli are less frequently found where fecal contamination is known to be absent, which makes them a better indicator of actual fecal contamination.

In 2002, EPA re-evaluated their bacteria criteria, and they stand behind their 1986 criteria document that shows E. coli (and enterococci) exhibited the strongest relationship with swimming-associated gastrointestinal illnesses. See EPA's *Ambient Water Quality Criteria for Bacteria – 1986* (<http://www.epa.gov/waterscience/beaches/files/1986crit.pdf>).

Moving the recreational seasonal date to the main body of the rule makes it easier to show when all the recreation criteria apply.

**2.14 § :51 – Criteria for limited contact recreation waters.**

Please see the dissolved oxygen, E. coli and season date discussion in Section 2.13.

**2.15 § :55 – Criteria for toxic pollutants.**

This change updates the 40 CFR Part 131 reference to the most recent federal revision.

**2.16 § :56 – Site specific criteria for Whitewood Creek from Interstate 90 to its confluence with Gold Run Creek.**

These changes reflect the following:

- The July 1, 1988, date is no longer needed as the criteria are now in effect;
- The Homestake Mining Company permit has been transferred to the South Dakota Science and Technology Authority;
- The December 1, 1987, date is no longer needed as the permit is now in effect; and
- The discharge permits are now administered by the state and are no longer called national pollutant discharge elimination permits.

**2.17 § :63 – Application requirements for certification of compliance with water quality standards.**

This change updates the 40 C.F.R. 121 reference to the most recent federal revision.

**2.18 § :64 – Notice requirements for certification of compliance with water quality standards for hydropower facilities.**

These changes update the 40 C.F.R. 121 reference to the most recent federal revision and language to reflect Legislative Research Council's most current language use.

**2.19 § :64.01 – Notice requirements for certification of compliance with water quality standards for dredge and fill permits.**

These changes update the 40 C.F.R. 121 reference to the most recent federal revision and language to reflect Legislative Research Council’s most current language use.

**2.20 § :64.02 – Notice requirements for compliance with water quality standards for federal issued national pollutant discharge elimination system permits.**

These changes update the 40 C.F.R. 121 reference to the most recent federal revision and language to reflect Legislative Research Council’s most current language use.

**2.21 § :64.03 – Contents of public notice for certification of compliance with water quality standards.**

These changes update the 40 C.F.R. 121 reference to the most recent federal revision and language to reflect Legislative Research Council’s most current language use.

**2.22 § :65 – Secretary’s certification of compliance with water quality standards.**

These changes update the 40 C.F.R. 121 reference to the most recent federal revision and language to reflect Legislative Research Council’s most current language use.

**2.23 Appendix A – Total Ammonia Criteria**

This corrects a typographical error in equations 3 and 4.

**2.24 Appendix B – Toxic Pollutant Criteria**

These changes correct a typographical error and update criteria to be consistent with current EPA criteria.

**3.0 Chapter 74:51:02 – Uses Assigned to Lakes**

Several lakes are being recommended for fish life propagation uses. The domestic water supply use is recommended to be removed on several lakes, and two lakes are recommended to be deleted from this chapter as they no longer exist.

The following lakes are being recommended for changes –

Lake	Recommendation	Current Beneficial Uses	Proposed Beneficial Uses
East 81 Lake (Brookings County)	Add fishery and recreational use	9	4,7,8,9
Lake Bedashosha (Buffalo County)	Delete from chapter	5,7,8,9	9
Bitter Lake (Day County)	Add fishery and recreational use	9	4,7,8,9
Mina (Parmley ) Lake (Edmunds County)	Remove drinking water use	1,4,7,8,9	4,7,8,9
Angostura Reservoir (Fall River County)	Remove drinking water use	1,4,7,8,9,10	4,7,8,9,10

Coldbrook Reservoir (Fall River County)	Remove drinking water use	1,2,7,8,9	2,7,8,9
Cottonwood Springs (Fall River County)	Remove drinking water use	1,4,7,8,9	4,7,8,9
Woodruff Lake (Hughes County)	Delete from chapter	5,7,8,9	9
Murdo Dam (Jones County)	Remove drinking water use	1,4,7,8,9	4,7,8,9
West 81 (Twin) Lake (Kingsbury County)	Add fishery and recreational use	9	4,7,8,9
Iron Creek Lake (Lawrence County)	Remove drinking water use	1,2,7,8,9	2,7,8,9
Mirror 1&2 (Lawrence County)	Remove drinking water use	1,2,7,8,9	2,7,8,9
Yates Ponds (Lawrence County)	Add fishery and recreational use	9	2,7,8,9
Lake Byre (Lyman County)	Remove drinking water use	1,4,7,8,9	4,7,8,9
White Lake (Marshall County)	Remove drinking water use	1,4,7,8,9	4,7,8,9
Twin Lakes (Minnehaha County)	Add fishery and recreational use	9	4,7,8,9
Old Wall Lake (Pennington County)	Remove drinking water use	1,5,7,8,9	5,7,8,9
Long Lake (Sanborn County)	Delete from chapter	6,7,8,9	9

### Removal of drinking water supply beneficial use

The reasons for the proposed removal of the drinking water supply designated use are varied. For most of the waterbodies, they were historically used as a drinking water supply but are no longer used as such due to municipalities switching to newer water supplies. The municipalities have since abandoned these waterbodies as sources of drinking water. Other reasons are the waterbody may have been designated as a drinking water supply but that use has never been developed. DENR has obtained or received factual information that the drinking water use is not an existing use for any of these waterbodies. This information was provided by DENR's Drinking Water Program. For practical reasons, the Department is recommending the drinking water supply beneficial use be removed from these waterbodies.

### **3.1 § :02 – Brookings County, uses of certain lakes.**

East 81 Lake is being recommended by Game, Fish and Parks as a warmwater permanent fishery, immersion recreation waters, limited contact waters and fish and wildlife propagation, recreation, and stock watering.

This recommendation is based on South Dakota Game, Fish, and Parks data indicating the lake is supporting a healthy, self-sustaining fishery.

**3.2 § :11 – Buffalo County, uses of certain lakes.**

The dam on Crow Creek that created Bedashosha Lake is breached. Crow Creek now flows freely through the breach and there are no plans on repairing or rebuilding the dam.

See the DENR report at <http://www.state.sd.us/denr/denr.html>.

**3.3 § :21 – Day County, uses of certain lakes.**

Bitter Lake is recommended to be assigned the beneficial uses of warmwater permanent fish life propagation waters, immersion recreation waters, limited contact waters, and fish and wildlife propagation, recreation, and stock watering waters.

This recommendation is based on South Dakota Game, Fish, and Parks data indicating the lake is supporting a healthy, self-sustaining fishery.

**3.4 - § :25 – Edmunds County, uses of certain lakes.**

It is recommended the domestic water supply be removed from Mina Lake as a use because the lake is not being used as a drinking water supply.

**3.5 - § :26 – Fall River County, uses of certain lakes.**

It is recommended the domestic water supply be removed from Angostura Reservoir, Coldbrook Lake, and Cottonwood Springs Lake as a use because these lakes are not being used as drinking water supplies.

**3.6 - § :35 – Hughes County, uses of certain lakes.**

The dam that formed Woodruff is breached and the South Fork Medicine Knoll Creek flows freely through the breach. There are no plans to repair or rebuild the dam. This section is being repealed because Woodruff Lake is the only lake in Hughes County listed as a fishery.

See the report at <http://www.state.sd.us/denr/denr.html>.

**3.7 - § :40 – Jones County, uses of certain lakes.**

Murdo Lake is no longer used a domestic water supply. It is recommended that the domestic water supply use be deleted as a beneficial use.

**3.8 § :41 – Kingsbury County, uses of certain lakes.**

West 81 (Twin) Lake is being recommended by Game, Fish and Parks as a warmwater permanent fishery, immersion recreation waters, limited contact waters and fish and wildlife propagation, recreation, and stock watering.

This recommendation is based on South Dakota Game, Fish, and Parks data indicating the lake is supporting a healthy, self-sustaining fishery.

**3.9 § :43 – Lawrence County, uses of certain lakes.**

It is recommended that the domestic water supply use be deleted as a beneficial use from Iron Creek Lake, Mirror 1 Lake and Mirror 2 Lake as they are not used as domestic water supplies.

Yates Ponds are being recommended by Game, Fish and Parks as a coldwater permanent fishery, immersion recreation waters, limited contact waters and fish and wildlife propagation, recreation, and stock watering.

This recommendation is based on South Dakota Game, Fish, and Parks data indicating the lake is supporting a healthy, self-sustaining fishery.

**3.10 § :45 – Lyman County, uses of certain lakes.**

It is recommended that the domestic water supply use be deleted as a beneficial use from Lake Byre as the lake is not used as domestic water supply.

**3.11 § :48 – Marshall County, uses of certain lakes.**

It is recommended that the domestic water supply use be deleted as a beneficial use from White Lake as the lake is not used as domestic water supply.

**3.12 § :52 – Minnehaha County, uses of certain lakes.**

Twin Lakes are being recommended by Game, Fish and Parks as a warmwater permanent fishery, immersion recreation waters, limited contact waters and fish and wildlife propagation, recreation, and stock watering.

This recommendation is based on South Dakota Game, Fish, and Parks data indicating the lake is supporting a healthy, self-sustaining fishery.

**3.13 § :54 – Pennington County, uses of certain lakes.**

It is recommended that the domestic water supply use be deleted as a beneficial use from Old Wall Lake Byre as the lake is not used as domestic water supply.

**3.14 § :55 – Perkins County, uses of certain lakes.**

This corrects a typographical error.

**3.15 § :58 – Sanborn County, uses of certain lakes.**

Long Lake is being recommended being deleted from this section based on field work completed by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

**4.0 Chapter 74:51:03 – Uses Assigned to Streams**

These changes recommend changes to the beneficial uses to a number of streams. These changes are summarized below.

Stream	Recommendation	Current Beneficial Uses	Proposed Beneficial Uses
Cobb Creek, also known as Florida Creek	Change fishery use	3,8,9,10	4,8,9,10
Jorgenson River	Extend current fishery/recreational designation to include a new segment of the river	9,10	6,8,9,10
Mud Creek	Add fishery and recreational use	9,10	6,8,9,10
Grindstone Creek	Add fishery and recreational use	9,10	6,8,9,10
Big Sioux River	Remove drinking water use for a segment of the river	1,5,8,9,10	5,8,9,10
Pattee Creek	Add fishery and recreational use	9,10	5,8,9,10
Beaver Creek	Change fishery use	3,8,9,10	5,8,9,10
Cascade Creek	Change fishery use	2,7,8,9,10	3,7,8,9,10
Unnamed tributary of Crow Creek	Add fishery and recreational use	9,10	2,8,9,10
Spearfish Creek	Change fishery use and add to a segment of the creek	3,8,9,10	2,8,9,10
	Add commerce and industry use to a segment of the creek	1,2,7,8,9,10	1,2,7,8,9,10,11
Keya Paha River	Remove drinking water use	1,5,8,9,10	5,8,9,10
Norwegian Gulch Creek	Add fishery and recreational use	9,10	5,8,9,10
Big Slough Creek	Add fishery and recreational use	9,10	5,8,9,10

**4.1 § :04 – Minnesota River’s tributaries’ uses.**

Florida Creek, also known as Cobb Creek

This change in beneficial use classification is recommended after a DENR TMDL study showed that Florida Creek, also known as Cobb Creek, is no longer stocked with trout, which initially led to the creek being designated as a coldwater marginal fishery.

Coldwater species have not been stocked nor have coldwater species been collected since the 1930's. During the TMDL study, only warmwater species were collected with the data indicating these populations are self supporting. A total of 15 species of fish were collected with the Central Stoneroller, Common Shiner, and Creek Chubs the most abundant fish collected.

See report at <http://www.state.sd.us/denr/denr.html>.

#### Jorgenson River

This current warmwater marginal fishery and limited contact recreations uses are being recommended to be extended further upstream to a point near Peever. This recommendation is based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

#### Mud Creek

Mud Creek, a tributary of the South Fork Yellow Bank River, is being recommended for the beneficial uses of warmwater marginal fish life propagation and limited contact recreation based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

### **4.2 § :06 – Bad River and certain tributaries' uses.**

#### Grindstone Creek

The department is recommending the beneficial uses of warmwater marginal fish life propagation and limited contact recreation be assigned to Grindstone Creek based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

### **4.3 § :07 – Big Sioux River and certain tributaries' uses.**

#### Big Sioux River

The department is recommending the domestic water supply uses be removed as a beneficial use of the Big Sioux River from the Brookings-Moody County Line to Lake Kampeska. This recommendation recognizes that no communities are using the Big Sioux River as a domestic water supply source in this stretch of the Big Sioux River.

The domestic water supply use is still assigned from the Brooking-Moody County Line to the Sioux Falls Diversion Ditch because Sioux Falls uses the Big Sioux River as a domestic water supply.

Also see the previous discussion concerning the removal of the drinking water use in the Uses Assigned to Lakes chapter.

#### Pattee Creek

The department is recommending the beneficial uses of warmwater semipermanent fish life propagation and limited contact recreation be assigned to Pattee Creek based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

### **4.4 § :08 – Cheyenne River and certain tributaries’ uses.**

#### Beaver Creek (Custer and Fall River County)

The department is recommending that Beaver Creek be reclassified as a warmwater semipermanent fishery. This is based on a TMDL study that found the stream has frequent periods of very low flow/no flow conditions. Coldwater fish have not been stocked in the creek, and no coldwater fish were found during fish surveys.

See the report at <http://www.state.sd.us/denr/denr.html>.

#### Cascade Creek

The department is recommending that Cascade Creek be reclassified as a coldwater marginal fishery. This is based on a TMDL study that found that fish stocking records and the fish community reflect the actual fishery use. The recommendation also would be consistent with Game, Fish and Parks management of the stream as a “put and take” fishery.

See the report at <http://www.state.sd.us/denr/denr.html>.

### **4.5 § :10 – The Belle Fourche River and certain tributaries’ uses.**

#### Unnamed tributary of Crow Creek

The department is recommending that the Unnamed tributary of Crow Creek from the McNenney Hatchery outfall to Crow Creek be classified as a coldwater permanent fishery. This recommendation is based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

#### Spearfish Creek

Game, Fish and Parks recommends that the section of Spearfish Creek below Maurice Dam and the Spearfish Intake be reclassified as a coldwater permanent fishery. This is based on their fish population studies.

The department is recommending the commerce and industry beneficial use be assigned for the segment of Spearfish Creek from Intake Gulch to Maurice Dam. This recognizes that this water is being used for hydroelectric power.

#### **4.6 § :20 – James River and certain tributaries’ uses.**

##### Cain Creek

The change to Cain Creek from the James River to S33, T110N, R 63W corrects a typographical error.

#### **4.7 § :24 – Niobrara’s tributaries’ uses.**

The department is recommending the domestic water supply use be removed as the Keya Paha River is no longer used for domestic water supply.

#### **4.8 § :25 – Vermillion River and certain tributaries’ uses.**

The department is recommending that the warmwater semipermanent fish life propagation and limited contact recreation beneficial uses be assigned to Norwegian Gulch Creek. These recommendations are based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.

#### **4.9 § : 26 – White River and certain tributaries’ uses.**

These changes correct typographical errors.

#### **4.10 § :27 – Red River of the North’s tributaries’ uses.**

##### Big Slough Creek

The department is recommending that the warmwater semipermanent fish life propagation and limited contact recreation beneficial uses be assigned to Big Slough Creek. These recommendations are based on a field study conducted by the department.

See the report at <http://www.state.sd.us/denr/denr.html>.