

# 2024 Addendum to the South Dakota Mercury TMDL

## Scott Lake

### 1.0 Introduction

The South Dakota Department of Agriculture and Natural Resources (SDDENR) adopted the Statewide Mercury Total Maximum Daily Load (TMDL) in 2016. The [Statewide Mercury TMDL](#) currently has 79 Assessment Units (AUs) covered under its most recent addition. While 70 AUs originate from the original Mercury TMDL, the remaining nine AU's come from addendums such as this one. Those added waterbodies include [Sheriff Dam, Clubhouse Lake, James River \(segment 8\), Stockade, Sheridan, Potts, Stink, Durkee, and East Lemmon Lake](#). The SDDANR currently seeks coverage for an additional waterbody to be covered under the original Statewide Mercury TMDL in accordance with Section 303(d) of the Clean Water Act (CWA). With the previous TMDL, two previous addenda, and this current addition, 80 AUs are to be covered under the Statewide Mercury TMDL. This addendum does not modify any aspect of the Statewide Mercury TMDL and the allocations and TMDL remain as presented in the original Statewide Mercury TMDL (in kilograms per year [Kg/yr]).

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#### *Annual Statewide Mercury TMDL Calculation*

*TMDL (595.32 Kg/yr) = WLA (4.84 Kg/yr) + LA (590.48 Kg/yr) + MOS (implicit)*

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Refer to Section 10.0 of the original TMDL for more information on how the SDDANR calculated the annual and daily load (3.21 Kilograms per day [Kg/day]). This addendum includes information specific to a single AU in South Dakota that was identified as impaired on the 2024 section of the 303(d) list within the Integrated Report. [Figure 1](#) shows the location of the waterbody. [Table 2](#) identifies the AU in addition to the acreage of the waterbody. Fish tissue samples collected from this AU exhibited methylmercury concentrations exceeding the 0.3 milligrams per Kilogram (mg/Kg) human health criteria identified in the Administrative Rules of South Dakota (ARSD) [Chapter 74:51:01 Appendix B](#). Please note that any reference to “mercury in fish or mercury in fish tissue” in this addendum refers to the organic form of mercury known as methylmercury.

For a waterbody to be determined as impaired for mercury in fish tissue for lakes and streams within South Dakota, a minimum of 10 fish tissue samples are required for assessment. At least three fish tissue samples per species is required. There is no minimum number of sampling events, and all data within 10 years of the most recent Integrated Report (IR) will be used. The

composite mean result of each fish species will be compared to Water Quality Criteria (WQC). If any species mean composite result exceeds the WQC, or if a fish consumption advisory has been advised it will be considered non-supporting.

Refer to the original, approved TMDL document for details related to the overall methods and assumptions used in establishing the [South Dakota Statewide Mercury TMDL](#). For coverage under the Statewide Mercury TMDL, a waterbody must meet the following conditions in [Table 1](#).

Table 1. Displays the assumptions necessary for a waterbody to be placed within the South Dakota Mercury TMDL

#	Description	Report Section
1.	It falls entirely within state jurisdiction.	2.0 Jurisdiction
2.	If jurisdiction is shared, it may only apply to those portions of the water under South Dakota jurisdiction.	2.0 Jurisdiction
3.	The standard-length fish (SLF) tissue methylmercury concentration from the water does not exceed 0.878 mg/Kg.	3.0 Comparable Existing Conditions
4.	There are no potential impacts from current or historic gold mining processes.	4.1 Mining
5.	If it is a river or stream, National Pollutant Discharge Elimination System (NPDES) discharges do not exceed permitted limits.	4.3 NPDES Permitted Sources
6.	The Total Maximum Daily Load (TMDL) will meet the water quality in the proposed water.	3.0 Comparable Existing Conditions 6.0 Water Quality Standards
7.	The original TMDL assumptions (e.g., source contributions, loading capacity, etc.) are still valid.	3.0 Comparable Existing Conditions 4.0 Source Assessment - Point Sources 5.0 Source Assessment - Nonpoint Sources 6.0 Water Quality Standards

The third condition expresses a fish flesh methylmercury cap of 0.878 mg/Kg. This was the maximum concentration observed from a SLF within Bitter Lake in the original TMDL (2016). As a direct result, any waterbody with a SLF fish flesh concentration exceeding this benchmark is void from coverage under the Statewide Mercury TMDL and will need to be addressed under a waterbody specific TMDL report.

This addendum demonstrates that the AU shown in [Table 2](#) satisfies each of the conditions described above, and in doing so, falls under the coverage of the original South Dakota Mercury TMDL.

[Table.2 Proposed waterbodies to be added to the South Dakota Mercury TMDL](#)

Assessment Unit ID	Common Name	Acres/Miles in EPA ADP
SD-BS-L-SCOTT_01	Scott Lake	80.27

## 2.0 Jurisdiction

Scott Lake is within the jurisdiction of the State of South Dakota. [Figure 1](#) shows locations of Tribal Lands and Reservations with respect to the waterbody listed in this addendum. The jurisdictional location of Scott Lake allows the state of South Dakota to manage it for the benefit of the public. It also provides the necessary authority needed for restoring it to full attainment of all the lake’s designated beneficial uses.

# Scott Lake Location

(For State Jurisdiction Regarding Hg Impaired Waterbodies)

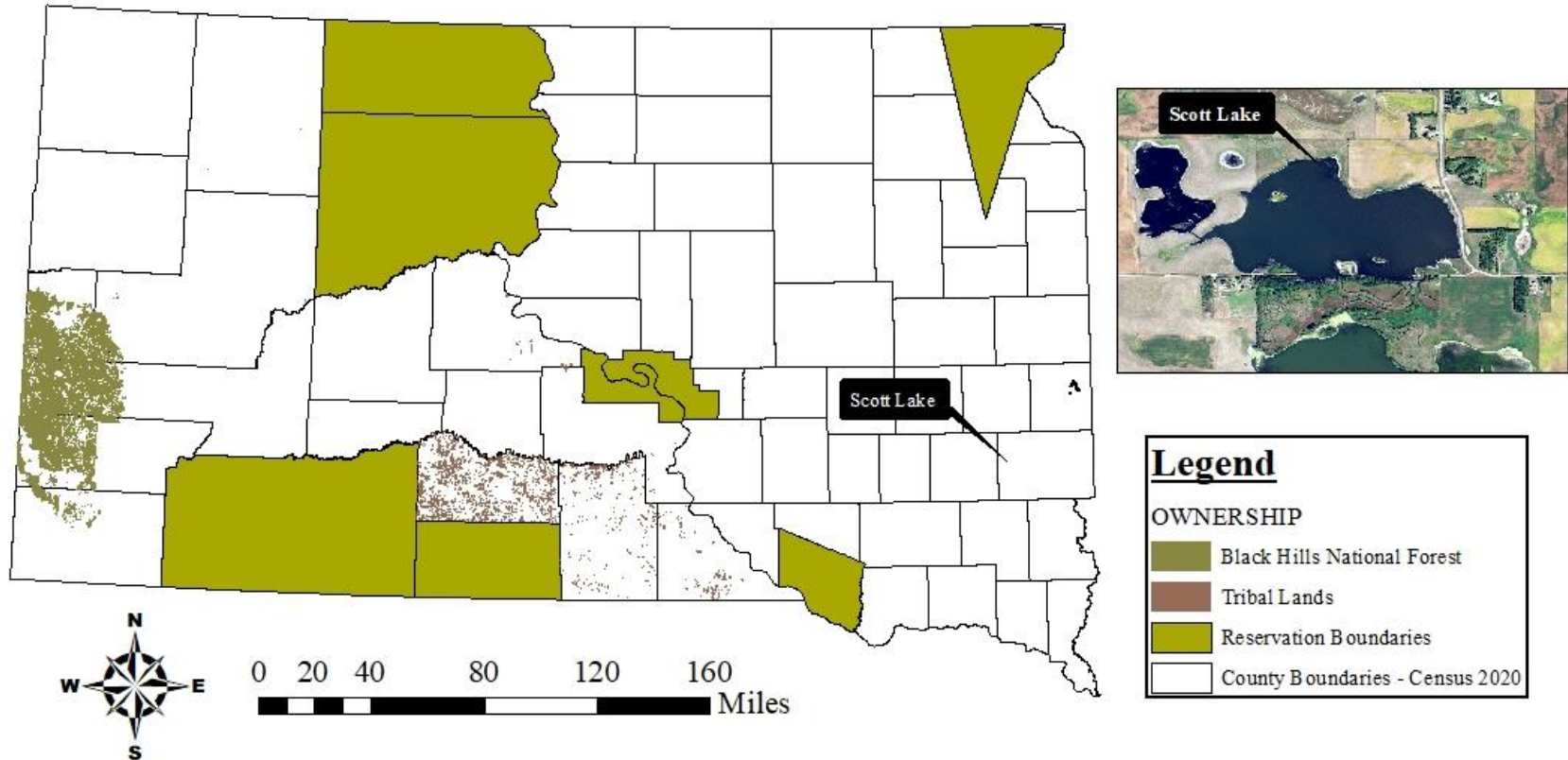


Figure 1. Location of Scott Lake in relation to Tribal Lands and Reservations in South Dakota

### 3.0 Comparable Existing Conditions

To determine the applicability of the South Dakota Mercury TMDL for additional waterbodies, a review of existing conditions must be completed. This review discusses fisheries, loadings analysis, and potential sources, both point and nonpoint that were similarly discussed as part of the original TMDL.

#### 3.1 Fishery

Scott Lake is an 80.27-acre lake situated in Minnehaha County, South Dakota. It is considered a high-priority waterbody due to mercury impairment and has a maximum depth of 11 feet. To determine reductions for waterbodies within the state of South Dakota, the methylmercury concentration in a standard-length fish was used as the benchmark (or standard) to which all waterbodies can be compared. The most commonly targeted species for anglers in South Dakota are Walleye (*Sander vitreus*) and the standard length was determined to be 15.1 inches or approximately 384 millimeters. For more information on how these assumptions were generated, reference the original [Statewide Mercury TMDL](#).

[Figures 2 and 3](#) detail the distribution of mercury concentrations in fish species sampled from Scott Lake, further supported by Appendix A, which catalogues individual methylmercury data for these fish. A fish of standard length (15.1 inches) from Scott Lake adhering to the methylmercury criteria limit of 0.878 mg/kg aligns with the requirements set forth in the third and sixth conditions of the Statewide TMDL. While Scott Lake's fish demonstrate methylmercury levels below the 0.878 mg/Kg criteria, it's important to note that the average concentration still surpasses the specific water quality criterion of 0.3 mg/kg for Scott Lake. This suggests that while the lake's current status does not fully meet all local water quality criteria, it is compliant with statewide mercury reduction goals. Implying that although there is an exceedance of Scott Lake's specific water quality criteria, the overall strategies from the original TMDL and reduction measures are effective in moving towards water quality standard attainment.

Moving from a general overview to a focused analysis, we now turn our attention specifically to Walleye in Scott Lake. [Figure 2](#) focuses on mercury concentrations in standard length fish (SLF) from the lake, marked by a red dashed line. This illustration shows that while these levels surpass the EPA's 0.3 mg/kg criterion, they remain under the 0.878 mg/kg SLF threshold set for other waterbodies, thus meeting the third specified condition.

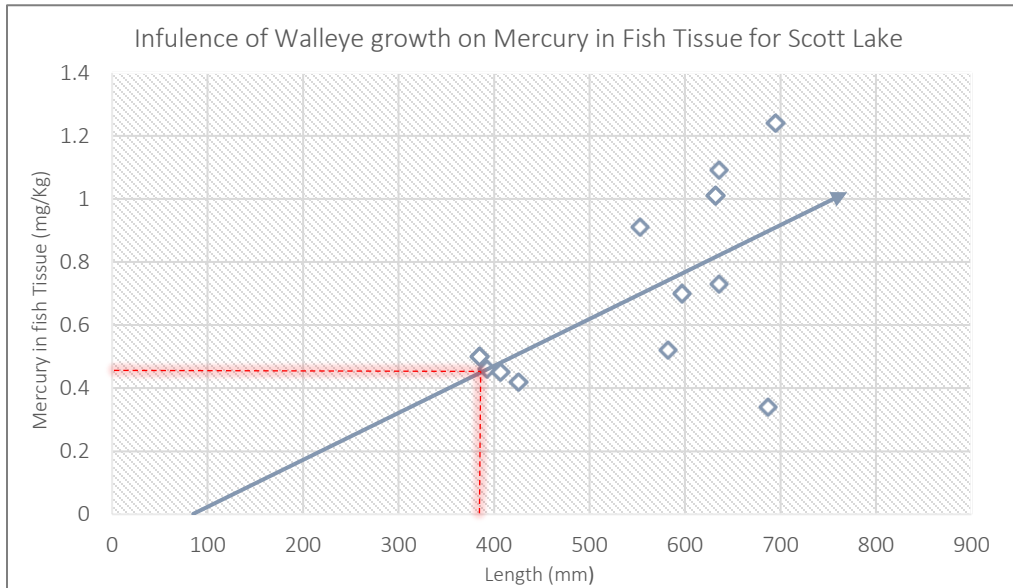


Figure 2. Scott Lake Mercury (mg/Kg) Concentrations vs Length (mm).

A linear regression line has been drawn showing the approximate trend of mercury in Walleye as fish grow. Red dashed lines intersect the regression line to represent how much mercury a SLF from Scott Lake would be expected to possess.

The mercury results from two other Scott Lake species differ significantly from Walleye (Figure 3). Both Black Bullhead and Yellow Perch sit below the 0.3 mg/Kg mercury impairment criteria. Black Bullheads are opportunistic feeders with a diet consisting of macroinvertebrates and other food sources that are at or near the base of the food chain (Leunda, et al., 2008) leading to a lower bioaccumulation rate. While it is true that Yellow Perch are piscivorous as adults, the Yellow Perch in South Dakota prey on other food items as well. A South Dakota food habits study on Yellow Perch demonstrated that the fast growth of Yellow Perch was attributed to a diet consisting of aquatic insects including chironomids, amphipods, and corixids (Lott, et al., 2011). These aquatic insects and crustaceans are lower in the food chain than bait fish and don't bioaccumulate mercury as quickly. This could be one reason why Yellow Perch in Scott Lake do not have a larger range of mercury within fish flesh.

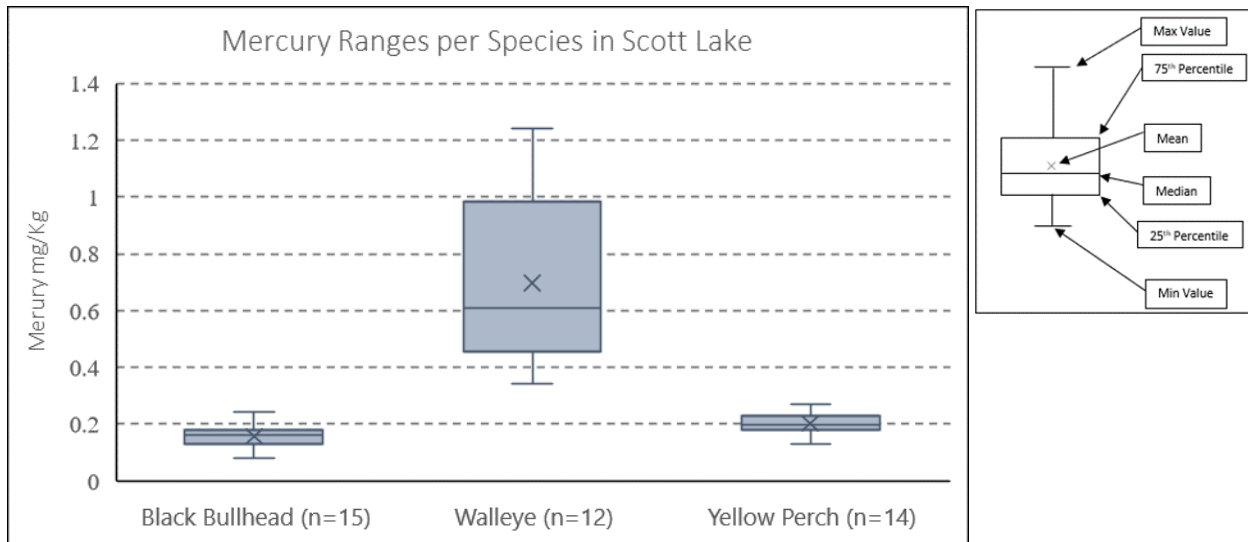


Figure 3. Mercury concentrations per species in Scott Lake

#### 4.0 Source Assessment – Point Sources

Point sources of water pollution are grouped as follows: Mining, Municipal Separate Storm Sewer Systems (MS4s), National Pollutant Discharge Elimination System (NPDES) permitted facilities. Although the mercury in fish tissue impairments regarding the waterbodies listed in this addendum are not related to any specific point sources, a transparent assessment of these sources will demonstrate that the waterbody is meeting the necessary conditions for acceptance under the Statewide TMDL.

##### 4.1 Mining

Mercury mining and the use of mercury for the extraction of gold are potential point sources of inorganic mercury. Although mercury mining ceased in the United States in 1992 and mercury amalgamation for the extraction of gold has been replaced by cyanide leaching (Wentz et al., 2014), deposits from these processes remain a localized concern in portions of the country. South Dakota has no record of mercury mining occurring within Minnehaha County, SD and is of no concern for this waterbody in terms of point source pollution. This helps satisfy the fourth condition discussed earlier in the document.

##### 4.2 Municipal Storm Water Sewer Systems (MS4s)

The requirements of MS4 permits are to control anthropogenic loads in stormwater discharges. MS4's are considered a point source under the Clean Water Act and are typically included as a part of the point source waste load allocation (WLA) within the TMDL calculation. Factoring out atmospheric deposition, which is accounted for separately in the TMDL source assessment, and illicit discharges, which are already regulated, there should be no anthropogenic sources of mercury. Thus, the only source of mercury in MS4 loads is atmospheric deposition. The MS4

permit areas are included in the measured and modeled deposition results and are located in Table 24 (page 76) of the original TMDL. The MS4 permits included in the original TMDL, and their acreages are listed below in Table 3. The MS4s listed below have no impact on Scott Lake but are included here to ensure that these potential sources have been considered.

Table 3. MS4 permits, phase, and acreages in South Dakota (2016)

MS4	Permit	Phase	Area (acres)	Km <sup>2</sup>	Estimation Description
City of Sioux Falls	SDS0001	I	48429	196	Provided by permittee
City of Vermillion	SDR41A001	II	2410	10	The permittee provided the area within city limits, which is covered by the MS4
City of Pierre	SDR41A002	II	8340	34	Provided by permittee
City of Brookings	SDR41A003	II	7450	30	The area within Brookings, minus the SDSU campus, was provided by the permittee
Pennington County	SDR41A004	II	27320	111	Provided by permittee using GIS mapping
City of Mitchell	SDR41A005	II	7256	29	The area within Mitchell, minus Lake Mitchell, was provided by the permittee
City of Sturgis	SDR41A006	II	3100	13	The permittee provided the area within city limits, which is covered by the MS4
City of Rapid City	SDR41A007	II	35200	142	Provided by permittee
City of Aberdeen	SDR41A008	II	8960	36	Provided by permittee
SD DOT	SDR41A009	II	0	0	Already included
City of Watertown	SDR41A010	II	16596	67	Provided by permittee
City of North Sioux City	SDR41A011	II	1693	7	Provided by permittee
City of Huron	SDR41A012	II	6400	26	Provided by permittee
City of Yankton	SDR41A013	II	5278	21	Provided by permittee
City of Spearfish	SDR41A014	II	10250	41	Provided by permittee
Meade County	SDR41A015	II	3670	15	Provided by permittee

### 4.3 NPDES Permitted Sources

[SD Administrative Rule 74:51:01:27](#) states point source effluents discharge directly into lake systems are mandated to achieve Water Quality Standards (WQS) at the immediate point of discharge, thereby precluding the establishment of a mixing zone. The foundational Total Maximum Daily Load (TMDL) analysis assumes the regulation of such point sources via National Pollutant Discharge Elimination System (NPDES) permit stipulations mitigate localized exceedances of mercury WQS in lake environments. Within the Hydrologic Unit Code (HUC) 12 delineation for Scott Lake, identified specifically as the Beaver Lake Watershed with HUC designation 101702031101, there are 15 NPDES permitted facilities. These sites are shown in Table 4.

It is important to note that any facilities that have reasonable potential to cause impairments of any kind are required to have a NPDES permit. In 2015, when the original Statewide Mercury



TDML was developed, there were 247 NPDES facilities noted, and thus a total discharge was calculated using these facilities. The total discharge was then used to calculate the total point source load of mercury for the state of South Dakota. This indicates that the waste load for any permitted facility prior to 2015 has already been accounted for separately in the Statewide Mercury TMDL and won't be reintroduced as a potential new load here unless permit exceedances are noted. For more information on how these calculations were generated visit [Section 4.0](#) of the original Statewide Mercury TMDL.

Included within the Beaver Lake Watershed are two facilities classified as Publicly Owned Treatment Works (POTWs). The wastewater facility under Hartford's jurisdiction permit ([SD0021750](#)) was observed from 2010 to 2023, showing a minimum 30-day average effluent discharge of 0.63 Million Gallons per Day (MGD), peaking at 4.24 MGD, with an average discharge of 2.03 MGD. Noteworthy is that this facility has experienced nine informal violations over the last decade, all related to ammonia and nitrogen levels, with no infractions involving mercury. Significantly, the discharge from this facility enters Skunk Creek, following a drainage path that does not merge with Scott Lake. Furthermore, this facility was previously accounted for in the [Statewide Mercury TMDL](#) and therefore any additional load would not be applicable.

Progressing forward, we examine the NPDES permit (SD0024015-[SDG824015](#)) for the wastewater facility in Humboldt, SD. Notably, although Beaver Lake is situated downstream, it lacks a direct hydrological connection to Scott Lake. This key separation, along with the facility's status as a no-discharge permit, rules out its potential as a mercury pollution source. Therefore, it is exempt from receiving a WLA.

An additional nine facilities with stormwater permits ([SDR10XXX](#)) are related to general construction activities. Similar to the preceding permits, they cannot impact Scott Lake's water quality due to their lack of hydrological connection to the lake. This fundamental absence of a direct or indirect water pathway is the most critical factor in ensuring they do not contribute to pollution in Scott Lake. While these permits do allow for stormwater discharges during construction, they come with stringent restrictions against releasing substances that could degrade WQS. Consequently, these facilities were not issued a WLA for mercury. Moreover, their compliance record is exemplary, with no reported violations that would suggest a risk to water quality.

Building on the examination of stormwater permit holders, the focus shifts to the remaining group of facilities under the ([SDR00XXXX](#)) permit classification, which are engaged in general industrial stormwater activities. The defining safeguard for Scott Lake's water quality in relation to these entities, again, lies in the absence of any hydrologic connection. This ensures that despite their potential for discharges during industrial operations, similar to the previous permit holders, they cannot adversely affect the waterbody. This comprehensive analysis of NPDES-permitted entities within the watershed underscores the lack of a quantifiable WLA contribution from point source mercury pollution within Scott Lake.

Table 4. Facilities with a NPDES permit within the HUC 12 Beaver Lake Watershed

Facility	City	State	Permit ID	Violations
E 6TH ST & MUNDT AVE RECONSTRUCTION - HARTFORD SD	HARTFORD	SD	SDR10K611	
GET N GO - WESTERN AVE	HARTFORD	SD	SDR10K665	
HARTFORD, CITY OF	HARTFORD	SD	SDR000215343	
HARTFORD, CITY OF	HARTFORD	SD	SD0021750	9 informal actions
HUMBOLDT, CITY OF	HUMBOLDT	SD	SD0024015 - SDG824015	
IRON HORSE SALVAGE	HARTFORD	SD	SDR000218545	
MAPLE PASS APARTMENTS & TOWNHOMES	HARTFORD	SD	SDR10K737	
MCWC SERVICE AREA 6 - 12" PIPELINE	HUMBOLDT	SD	SDR10P51R	
PCN 05T2 & 0965	HARTFORD	SD	SDR10P50A	
PCN 05T3	HARTFORD	SD	SDR10P238	
PUBLIC SAFETY TRAINING CAMPUS	SIOUX FALLS	SD	SDR10K438	
RONDEAU RECYCLING	HARTFORD	SD	SDR000219535	
SOUTH MAIN ADDITION TO CITY OF HARTFORD	SIOUX FALLS	SD	SDR10B309	
TWO GUYS & A GARAGE AUTO REPAIR	HARTFORD	SD	SDR000220061	
WESTERN MEADOWS ADDITION HARTFORD	HARTFORD	SD	SDR10C962	

## 5.0 Source Assessment – Nonpoint Sources

Nonpoint source mercury pollution in South Dakota consists of >99% of the mercury found in the state’s waterbodies. The process is understood to be directly related to atmospheric sources. The data used for the load analysis in the original TMDL was obtained from a wet and dry mercury deposition study conducted by Dr. Stone at the South Dakota School of Mines and Technology (SDSM&T) in addition to existing data within the Mercury Deposition Network. It was determined in the original Statewide Mercury TMDL that the reductions would ultimately come from nonpoint sources.

The original Statewide Mercury TMDL highlights that up to 30% of mercury emissions are natural and unmodifiable. To meet Water Quality Standards (WQS), a 79% reduction in anthropogenic mercury sources is necessary. Within the anthropogenic fraction, it is estimated that 4.5% of the nonpoint source load originates from South Dakota, primarily due to emissions from Otter Tail Power Company and Wharf Resources Inc. These facilities, detailed in Section 4.3 of the original TMDL, are significant contributors to mercury deposition in the state. However, they are subject

to regulation and must adhere to the South Dakota Administrative Rules [74:36:06:01](#), ensuring they operate within established environmental guidelines.

## 6.0 Water Quality Standards

All waters (both lakes and streams) are assigned the beneficial use of fish and wildlife propagation, recreation, and stock watering. All streams are assigned the beneficial use of irrigation. The state assigns additional uses based on a beneficial use analysis of each waterbody. Each beneficial use has a set of WQC to protect those uses. The Administrative Rules of South Dakota (ARSD) contains the WQC in [Chapter 74:51](#). South Dakota WQC specifically address mercury concentrations in the water column designed to protect human health and aquatic health. The more restrictive mercury concentrations were established for human health. [Table 5](#) shows the beneficial use classifications in South Dakota and the numeric criteria assigned to those uses. All criteria are reported in the total recoverable mercury or total methylmercury (for fish tissue) fraction.

Table 5. Beneficial Uses for Human and Aquatic Life Criteria

Use Classification	Use Description	Human Health		Aquatic Life	
		Water Column Hg	Fish Tissue CH <sub>3</sub> Hg <sup>+</sup>	Acute (CMC) Hg	Chronic (CCC) Hg
		µg/L	mg/Kg	µg/L	µg/L
(1)	Domestic water supply waters	0.050			
(2)	Coldwater permanent fish life propagation waters	0.051	0.3	1.4	0.77
(3)	Coldwater marginal fish life propagation waters	0.051	0.3	1.4	0.77
(4)	Warmwater permanent fish life propagation waters	0.051	0.3	1.4	0.77
(5)	Warmwater semipermanent fish life propagation waters	0.051	0.3	1.4	0.77
(6)	Warmwater marginal fish life propagation waters	0.051	0.3	1.4	0.77
(7)	Immersion recreation waters				
(8)	Limited contact recreation waters				
(9)	Fish and wildlife propagation, recreation, and stock watering waters	0.051	0.3	1.4	0.77
(10)	Irrigation waters				
(11)	Commerce and industry waters				

Additional water quality regulations which apply to mercury impairments include the biological integrity of waters. Elevated mercury levels may impair biological integrity, such as reduced reproductive success of Walleye (Selch, 2008). ARSD Section [74:51:01:12](#) states that all waters of the state must be free from substances, whether attributable to human-induced point source

discharges or nonpoint source activities, in concentrations or combinations which will adversely impact the structure and function of indigenous or intentionally introduced aquatic communities. Additionally, ARSD Section [74:51:01:55](#) also states that toxic pollutants (including mercury) may not exist at levels that are or may become injurious to public health, safety, or welfare. Protection of these narrative criteria is best accomplished by meeting the most stringent numeric water column criteria 0.050 µg/L of total mercury.

As a part of the 2014 triennial review, SDDANR proposed the Water Management Board adopt WQC, including a fish flesh methylmercury (MeHg) standard of 0.3 mg/Kg. This concentration is the EPA recommended human health criterion applicable to beneficial uses 2, 3, 4, 5, 6, and 9. The waterbodies included in this addendum and their beneficial uses are shown in [Table 6](#).

Table 6. Beneficial Uses for Scott Lake

Common Name	County	Beneficial Uses
Scott Lake	Minnehaha	6,7,8,9

The original TMDL identified a target of 0.3 mg/Kg based on the approved EPA human health criterion (and approved by the State of SD). This fish flesh concentration standard and target required a linkage to protect the existing mercury water column standards. This linkage was accomplished by applying a Bioaccumulation Factor (BAF) discussed in Section 2.0 of the original TMDL. Bioaccumulation refers to the uptake and retention of a chemical by an aquatic organism from all surrounding media, including water, sediment, and the food it consumes. The TMDL used a BAF to verify that the target and the human health criterion of 0.3 mg/Kg would translate back to total mercury levels in the water column below the most stringent South Dakota WQC (0.050 µg/L). For more detail on these calculations, please refer to Section 2.0 in the original TMDL.

The original TMDL used 0.669 mg/Kg (the existing condition) as the value from which to calculate reductions. These numbers were based on the SLF calculation process outlined in Section 3.0 of the original Mercury TMDL. The reduction factor (RF) was based on this existing condition and the fish tissue criteria of 0.3 mg/Kg. WE38 in the following equation refers to a SLF Walleye of 15 inches long. Reducing the methylmercury in fish flesh in Scott Lake by 55.2% will meet all appropriate WQS.

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$$RF = (WE38 - 0.3)/WE38$$

$$55.2\% = (0.669 - 0.3)/0.669$$


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## 7.0 Conclusion

This addendum has provided detailed information specific to Scott Lake and has conducted a thorough comparison with the original Statewide Mercury TMDL. This review encompassed an analysis of fish tissue, as well as an examination of the jurisdictional area, point sources, and nonpoint sources. The findings from this review demonstrate that Scott Lake satisfies the criteria for inclusion under the original TMDL.

No potential local sources of mercury were discovered for Scott Lake. SD Administrative Rule [74:51:01:27](#) states that point sources discharging directly into lakes must meet WQS at the point of discharge and are not allowed a mixing zone. This addendum, and the original TMDL, assumes that point sources are being controlled under this regulation through NPDES permit requirements and are not causing localized WQS exceedances of mercury. Additionally, because of the rural nature of Scott Lake, municipal stormwater discharges (MS4) are of no concern. The original statewide TMDL used the regional modeling system for aerosols and deposition model. This model demonstrated >99% of the mercury deposited into South Dakota's waterbodies is from atmospheric deposition sources.

Fish flesh analysis of the Walleye collected from Scott Lake exceeded the 0.3 mg/Kg level indicating a reduction in atmospheric mercury is necessary in order to reach full attainment. The average concentration from the Walleye tissue available for analysis was 0.70 mg/Kg of mercury with a 15-inch SLF exhibiting 0.446 mg/Kg. Since Walleye was also used to calculate a SLF concentration in the original Statewide Mercury TMDL a direct comparison to Scott Lake can be made. The SLF concentration from Scott Lake (0.446 mg/Kg) is significantly lower than the 0.669 mg/Kg of mercury calculated in the original TMDL. This demonstrates a 0.223 mg/Kg margin of safety if the 55.2% reductions from the original TMDL are met.

The lake listed in this addendum is within the state's jurisdiction, and no additional loading analysis (point or non-point) was needed to calculate reductions. The original Mercury TMDL (2016) includes additional margin of safety factors on pages 73-74, which further support the justification for full attainment. The fish flesh levels of mercury in Scott Lake present a value exceeding the EPA health standard and South Dakota WQC of 0.3 mg/Kg. Assuming the necessary atmospheric reductions occur, Scott Lake will fall below the threshold designation and will achieve full attainment.

## 8.0 Public Participation

A 30-day public comment period was issued for the draft TMDL Addendum. A public notice letter was published in the following local newspapers: Sioux Falls Argus Leader, Minnehaha Messenger, Madison Daily Leader, Parker New Era. The draft TMDL addendum document and ability to comment was made available on DANRs One-Stop Public Notice Page: <https://danr.sd.gov/public/default.aspx>. The public comment period began April 16, 2024 and ended May 21, 2024.

## Works Cited

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Wentz, D.A., Brigham, M.E., Chasar, L.C., Lutz, M.A., and Krabbenhoft, D.P., 2014, "Mercury in the Nation's streams - Levels, trends, and implications." U.S. Geological Survey Circular 1395. (<http://dx.doi.org/10.3133/cir1395>).

## Appendix A:

### Individual Fish Collected from Scott Lake within the Index Period

Site	Sample Year	Species	Length (mm)	Mercury (ppm)
Scott Lake	2019	Black Bullhead	214	0.2
Scott Lake	2019	Black Bullhead	205	0.17
Scott Lake	2019	Black Bullhead	187	0.16
Scott Lake	2019	Black Bullhead	212	0.15
Scott Lake	2019	Black Bullhead	186	0.12
Scott Lake	2019	Black Bullhead	193	0.16
Scott Lake	2019	Black Bullhead	203	0.14
Scott Lake	2019	Black Bullhead	245	0.08
Scott Lake	2019	Black Bullhead	239	0.24
Scott Lake	2019	Black Bullhead	217	0.18
Scott Lake	2019	Black Bullhead	213	0.11
Scott Lake	2019	Black Bullhead	201	0.14
Scott Lake	2019	Black Bullhead	233	0.13
Scott Lake	2019	Black Bullhead	202	0.17
Scott Lake	2019	Black Bullhead	222	0.2
Scott Lake	2019	Walleye	636	1.09
Scott Lake	2019	Walleye	636	0.73
Scott Lake	2019	Walleye	687	0.34
Scott Lake	2019	Walleye	695	1.24
Scott Lake	2019	Walleye	393	0.46
Scott Lake	2019	Walleye	582	0.52
Scott Lake	2019	Walleye	407	0.45
Scott Lake	2019	Walleye	426	0.42
Scott Lake	2019	Walleye	385	0.5
Scott Lake	2019	Walleye	553	0.91
Scott Lake	2019	Walleye	632	1.01
Scott Lake	2019	Walleye	597	0.7
Scott Lake	2019	Yellow Perch	220	0.18
Scott Lake	2019	Yellow Perch	280	0.22
Scott Lake	2019	Yellow Perch	273	0.27
Scott Lake	2019	Yellow Perch	183	0.18
Scott Lake	2019	Yellow Perch	258	0.18
Scott Lake	2019	Yellow Perch	200	0.2
Scott Lake	2019	Yellow Perch	246	0.18
Scott Lake	2019	Yellow Perch	169	0.13
Scott Lake	2019	Yellow Perch	255	0.22
Scott Lake	2019	Yellow Perch	243	0.2

Site	Sample Year	Species	Length (mm)	Mercury (ppm)
Scott Lake	2019	Yellow Perch	192	0.19
Scott Lake	2019	Yellow Perch	194	0.16
Scott Lake	2019	Yellow Perch	243	0.26
Scott Lake	2019	Yellow Perch	246	0.25



Appendix B:  
EPA Approval Letter and Decision Document