APPENDIX E:
EPA Responses to Public Comments

Table E-1. EPA responses to public comments received from Louisiana Department of Environmental Quality E-1

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Table E-3. EPA responses to public comments received from the Lake Pontchartrain Basin Foundation E-9

NOTE: Full public comment letters are included in Appendix D.

Table E-1. EPA responses to public comments received from Louisiana Department of Environmental Quality

#	Comment	EPA response
General		
1	LDEQ will be responsible for the implementation of this TMDL and future updates to this TMDL. Therefore, LDEQ requests that complete documentation, including all appendices, be provided to LDEQ upon approval of the TMDL.	EPA will provide LDEQ with the documentation once the TMDL has been finalized and approved.
2	LDEQ recommends that before reducing the allocation of any point source discharge, either to air or to surface waters, it should be determined that the point source, alone or in combination with other dischargers, has a significant impact on mercury levels in the surface waters of a watershed or in the coastal waters.	The majority of the loadings identified in this TMDL are from atmospheric deposition; therefore, surface water dischargers are not expected to cause significant impact. However, EPA believes their contributions should not be ignored. This TMDL does not specify allocations for air dischargers. Air dischargers are covered under the Clean Air Act and Cross-State Air Pollution Rule, which are being used independent of this TMDL to reduce mercury emissions. They are described in section 5 of the TMDL.
3	LDEQ noticed that the data presented in this TMDL do not evaluate the percentage of total mercury loadings to the referenced subsegments that is from Louisiana sources—either point sources or atmospheric deposition. What percent of the loading is from Louisiana sources? What percent of the Louisiana contribution is from point sources?	Information identifying all potential atmospheric sources in, or out of, Louisiana is not available. Upstream point source surface water dischargers were not evaluated as part of this TMDL. Those dischargers would affect only subsegments 040501 (Tickfaw River) and 040701 (Tangipahoa River). Given the findings that Louisiana point source surface water dischargers contribute only a small portion of the mercury load, other upstream sources are not expected to have a significant impact on the overall TMDL.
4	It was assumed that a linear relationship exists between fish tissue concentrations and methyl mercury concentrations in the water column. This relationship is variable and does not strongly support these TMDLs. Studies of the fish tissue concentrations of mercury in freshwater species do not indicate a linear relationship between water column or sediment concentrations and fish tissue concentrations. These relationships are likely to be complex and difficult to determine.	EPA concurs with the commenter that the relationship between mercury loading to a watershed and the accumulation of mercury in fish tissue is complex, highly variable, and influenced by a number of natural processes. This representation of mercury fate establishes a spatially varying relationship between point and atmospheric loadings, total mercury in soil, total mercury in water and sediment, methyl mercury in water and sediment, and mercury in fish tissue. This analysis assumes that reductions in loadings will lead to proportional mercury loading reductions in all media over time. Although this seems to be relatively simple, it does represent our current knowledge of mercury cycling in the environment. Studies done around the nation indicate that methylation uptake rates of available mercury can vary widely, with some studies confirming a linear relationship between loading and bioaccumulation in fish tissue. Recent modeling results from pilot studies in the Everglades support that, for the Everglades, there is a linear relationship

#	Comment	EPA response
		between mercury deposition and levels of mercury in fish. This relationship of fish mercury levels and deposition is almost 1:1. Although it is not appropriate to transfer these results directly to other sites, they do provide support that this assumption is realistic and has been substantiated in at least one other location. EPA recognizes that there is uncertainty regarding whether this relationship applies in all cases, and the Agency is working to improve the predictability of the models for mercury cycling in other systems, such as wetlands, tributary systems, and marine systems. A comprehensive data collection effort throughout the coastal watersheds, as well as within appropriate reference watersheds, involving water, sediment, and fish sampling in tandem would be necessary to demonstrate more specific methylation rates. However, without additional watershed-specific data to demonstrate a substantial decrease in the bioavailability of mercury in water or sediment, EPA has selected a conservative approach to calculate the estimated loading and necessary TMDL. The conservative assumption that 100 percent of the mercury loading is bioavailable is an implicit component of the margin of safety, which is a required element of a TMDL. This analysis assumes that reductions in loadings will lead to proportional mercury loading reductions in all media over time. Although the spatial representations and time trends predicted by the model are uncertain, the expected reduction of mercury concentrations in soil, water, sediment, and fish due to reduced loadings is sound. It should be obvious that present concentrations in fish have resulted from loadings averaged over an appropriate time (as affected by transport, transformation, and bioaccumulation processes). Further, if all loadings could be completely eliminated, the mercury concentrations in all media and fish would eventually equilibrate to very low levels, below concentrations of concern relative to human health. We assume that methylation/demethylation rates and food web structure will be unaffected by future mercury load reductions. Therefore, predicted mercury concentrations in all media at a location (given sufficient time to re-equilibrate) will be related to load reductions in a roughly linear manner. This approach used the best technology we have available for developing a TMDL for mercury.
5	Louisiana does not agree that fish tissue data should be used in the development of in-stream water quality based TMDLs. In-stream water quality does not directly correlate to fish tissue values due to the fact that mercury (methyl mercury) accumulates in different species	Please see response to General Comment 4.

#	Comment	EPA response
	at different rates. Accumulation may occur over long periods of time and as a result, older fish may contain higher levels of mercury.	
Specific		
1	Section 2.5, Point Sources, Table 2-4, page 2-5: LDEQ requests that EPA add a note at the end of Table 2-4 to say "Note b. Only facilities that demonstrate a reasonable potential to discharge mercury may be required to develop a mercury minimization program or receive a mercury limit or monitoring requirement."	This text was previously incorporated into section 4.2.1, which discuses WLAs. Section 2 identifies background information such as land use, hydrology, and existing criteria. Section 2.5 specifically identifies only point sources in the subsegments without discussing the potential effects of the TMDL. This text is more appropriate in section 4.2.1, where it was previously added.
2	Page ii, Table ES-2: LDEQ has reviewed the calculations and has found some errors. LDEQ recommends that EPA correct the values provided as the sum of the WLAs for subsegments 040701 and 040801 to match the values provided in Table 4-1, page 4-3.	This was a typographical error. The "+" should be "–" for the WLAs in those subsegments in Table ES-2. This will be changed in the final version.

Table E-2. EPA responses to public comments received from St. Tammany Parish

#	Comment	EPA response
General		
1	St. Tammany Parish requests that these comments be placed into the administrative record for the proposed TMDLs. The Parish is submitting these comments protectively as EPA has not yet acted on the Parish's request for an extension of the public comment period, filed on November 17, 2011. The Parish reserves the right to supplement these comments should the comment period be extended. The Parish believes that additional information that is critical to the establishment of the proposed TMDLs can be developed and submitted within a short period of time should the comment period be extended, as requested. It is understandable that due to time and economic constraints, EPA's contractor had to make many assumptions to simplify this calculation process, in order to use available databases and minimize data collection. However, the assumptions used in the calculations for the Pontchartrain Basin Mercury TMDL are too broad-sweeping. They will impose unachievable mercury load reductions, and it will not be possible to implement them. The TMDL will result in draconian water limits being imposed on many industries in the Basin, when in fact the source is from atmospheric deposition from approximately 41 of the 48 contiguous states. In general, the proposed draft TMDL does not present any compelling science for the mercury sources or loadings, much less the recommended reductions throughout the watersheds of subsegments 040801, 040905, and 040906.	Notice was given in the December 12, 2011, *Federal Register* that the public comment period for these TMDLs was being extended from December 29, 2011, until January 13, 2012. The original notice was published November 14, 2011, with a 45-day public comment period; that is longer than the required 30-day period, which is deemed suitable for most TMDL public comment periods. The review period was then extended an additional 15 days to make the public comment period 60 days. Comments were accepted until January 13, 2012. Methods used in calculating these TMDLs are consistent with previous TMDL s that have been developed and approved. Text has been added to the WLA section to indicate that "[o]nly facilities that demonstrate a reasonable potential to discharge mercury may be required to develop a mercury minimization program or receive a mercury limit or monitoring requirement."
2	Table ES-1. Section 303(d) listing for subsegments included in this report	The WLAs were based on water quality criteria. As stated in the TMDL report:

#	Comment	EPA response
		LDEQ's policy is to assess discharges for the reasonable potential to contain mercury. LDEQ's position is that all point sources do not discharge at a constant rate or at a constant mercury concentration equal to the water criterion for mercury. Where reasonable potential exists or where effluent analyses demonstrate mercury at levels above 12 ng/L in the effluent, the Louisiana Pollutant Discharge Elimination System permit will require developing a mercury minimization program or a mercury limitation or both will be placed in the permit to ensure compliance with the TMDL. In addition, the TMDL development method did not involve calibration (refer to section 4 for a description of the calculation method) and all calculations were reviewed to ensure there were no analytical errors. As stated in the TMDL, air deposition is a major source. Air dischargers are covered under the Clean Air Act and Cross-State Air Pollution Rule, which are being used independent of this TMDL to reduce mercury emissions. They are described in section 5 of the TMDL.
3	The TMDL report states that atmospheric deposition makes up 99.6 percent of the current mercury load and "[f]or each subsegment the sum of open water and wetland land use areas were used." St. Tammany Parish reviewers object to this. Methylation of mercury occurs primarily in sediments and wetland areas.	As you state, "methylation of mercury occurs primarily in sediments and wetland areas." The open water is a description in the GIS data and represents large areas of open water. Because these areas are natural

Subsegment	Subsegment name	Subsegment description	Designated use				303 (d)-listed suspected impairment sources	
			PCR	SCR	FWP	ONR	Source unknown	Atmospheric deposition
040801	Tchefuncte River	Tchefuncte River- From headwaters to Bogue Falaya River; includes tributaries	F	F	N	F	X	X
040905	Bayou Liberty	Bayou Liberty-From headwaters to LA-433	F	F	N		X	X
040906	Bayou Liberty	Bayou Liberty-From LA-433 to Bayou Bonfouca	F	F	N		X	X

Note: F = fully supporting, N = not supporting, X = suspected impairment source.

Table ES-2. Summary of mercury TMDLs, WLAs, and LAs for Lake Pontchartrain Basin

Subsegment	Existing load	Total allowable loading	∑ WLAs	∑ LAs
	lb/yr	lb/day		
040801	6.01	9.9E-03	4.0E+04	9.5E-03
040905	0.49	8.3E-04	0.0E+00	8.3E-04
040906	0.59	9.9E-04	0.0E+00	9.9E-04

Subsegment	Waterbody	Segment	Existing Load (lbs/yr)	Total Allowable Loading (lbs/yr)	0.4% (lbs/yr)	
40801	Tchefuncte River		6.01	9.9E-03	3.96E-05	0.0000396
40905	Bayou Liberty	HW to Hwy 433	0.49	8.30E-04	3.32E-06	0.0000033
40906	Bayou Liberty	Hwy 433 to LakeBayou Bonfouca	0.59	9.90E-04	3.96E-06	0.0000040

Subsegments 040801, 040905, and 040906 are listed on EPA's 2008 303(d) List (page 1-1) for mercury. St. Tammany Parish is aware of the necessity for the TMDL due to the impairment (with the Consent Decree as a driver); however, with 99.6 percent of the mercury load due to atmospheric deposition (pages ii and 2-5), the Parish questions the feasibility of implementing the TMDL for the remaining 0.4 percent, which provides an insignificant amount of loading into the subsegments— 0.0000396 lb/yr, 0.0000033 lb/yr, and 0.0000040 lb/yr for subsegments 090801, 090905, and 090906, respectively. This appears to be within potential calibration error, especially considering that an implicit MOS provided for an additional 10 percent error in all values.

St. Tammany reviewers question the ability of LDEQ to implement a TMDL based upon such tiny incremental values, which in fact may be calibration or analytical errors.

#	Comment	EPA response
	Please provide documentation that open water areas result in mercury methylation and quantify the methyl mercury contributions from the open water areas for each subsegment.	systems, they are assumed to have sediment on the bottom of the stream/river channel as the substrate. Therefore it is reasonable to assume that the area of open water corresponds to the area of sediment, where methylation can occur.
4	The TMDL report states that "[t]he water quality criterion maximum of 12 ng/L was assumed for the facility discharges in Table 2-4, and it was multiplied by the available flow to obtain a load. This methodology is consistent with the methodology in other EPA approved TMDLs, such as *Total Maximum Daily Loads (TMDLs) for Mercury in Fish Tissue for Coastal Bays and Gulf Waters in Louisiana* (USEPA 2005)." There is no reason to assume the dischargers have 12 ng/L in their respective discharges. In fact, in the EPA-approved TMDL cited above, EPA's contractor used permit limits in calculating the loads from WWTPs, even when (they admitted) actual DMRs are available and indicate much lower discharges and mercury concentrations. Two in particular, Jefferson Parish (15.66 MGD limits Hg 0.23 lb/day) and St. Bernard Parish (5.913 MGD limits Hg 0.18 lb/day), were estimated to contribute 38,159 g/yr and 9,864 g/yr, respectively. Compare these values with the City of New Orleans, which has no permit limit listed. Because there are no assigned limits, the City of New Orleans (discharges 104.4 MGD) is estimated to contribute 1,734 g-Hg/yr. This inconsistency, at the very least, should be eliminated for the WWTPs. EPA should use the DMRs to calculate attributable mercury loads. St. Tammany Parish believes it is ludicrous to subject NPDES dischargers to mercury minimization measures, or other form of regulation, on the basis of no data or worse, ignoring the data that are available. St. Tammany Parish requests documentation (citation of literature sources) for the assumption of 12 ng/L in facility discharges in subsegments 040801, 040905, and 040906 and quantification of their contributions to the WLA.	DMR data for mercury at the facilities receiving WLAs in this TMDL are not available. EPA chose to use a concentration (12 ng/L) that is protective of water quality and will not contribute to elevated mercury levels in the impaired subsegments. The concentration used (12 ng/L) is a target and not an assumed concentration. The text will be changed accordingly. In addition, LDEQ will determine whether permit limits are necessary. This may require data collection. Note that the five wastewater treatment plants in Jefferson Parish (Bridge City, Harvey, Kenner, Westwego, and Gretna) and the two in St. Bernard Parish (Fazendville, Munster) do not discharge to a mercury listed water body, which implies that those water bodies can handle additional mercury, whereas those subsegments that are listed as impaired from mercury cannot handle increased mercury loads.
5	The report stated four assumptions, three of which are: "Point sources were assumed to discharge at a constant rate and at a constant mercury concentration equal to the water quality criterion." "Atmospheric deposition was assumed to be significant only when applied directly to water or wetlands." "A linear relationship was assumed between fish tissue concentrations and methyl mercury reductions, which is consistent with bioaccumulation factors and steady state assumptions." Assumptions 1 and 2 were addressed in comments 2 and 3 above. Assumption 3 is equally flawed. The mercury TMDL for the Pontchartrain Basin resulted from fish tissue samples by LDHH, LDEQ and LDWF. The TMDL report states "[t]wo types of mercury—inorganic and organic—are present in the environment. The organic or methyl mercury form is the primary species of concern. Methyl mercury bioaccumulates in the proteins of fish and other organisms, resulting in increases through the various trophic levels. For example, young fish typically have lower concentrations than older fish. Appendix B contains a full list of the monitoring data." Further, assuming 100 percent of the mercury that is deposited in open water and wetlands is methylated and that 100 percent of this is bioavailable is not defensible. In-stream water quality is not necessarily directly related to fish tissue mercury. Fish tissue concentrations are related to forage locations and fish size. The older and	EPA concurs with the commenter that the relationship between mercury loading to a watershed and the accumulation of mercury in fish tissue is complex and highly variable and is influenced by a number of natural processes. This representation of mercury fate establishes a spatially varying relationship between point and atmospheric loadings, total mercury in soil, total mercury in water and sediment, methyl mercury in water and sediment, and mercury in fish tissue. This analysis assumes that reductions in loadings will lead to proportional mercury loading reductions in all media over time. While this seems to be relatively simple, it does represent our current knowledge of mercury cycling in the environment. Studies done around the nation indicate methylation uptake rates of available mercury can vary widely, with

#	Comment	EPA response
	heavier fish will have greater concentrations in their flesh. Further, mercury may be acquired in any location in which the fish have fed. Additionally, St. Tammany Parish does not agree that there is a linear relationship between fish tissue concentrations and methyl mercury reductions. Further, applying the assumption to Louisiana waterways on the basis of one study in the Everglades is inappropriate.	some studies confirming a linear relationship between loading and bioaccumulation in fish tissue. Recent modeling results from pilot studies in the Everglades support that, for the Everglades, there is a linear relationship between mercury deposition and levels of mercury in fish. This relationship of fish mercury levels and deposition is almost 1:1. Although it is not appropriate to transfer these results directly to other sites, they do provide support that this assumption is realistic and has been substantiated in at least one other location. EPA recognizes that there is uncertainty regarding whether this relationship applies in all cases, and the Agency is working to improve the predictability of the models for mercury cycling in other systems, such as wetlands, tributary systems, and marine systems. A comprehensive data collection effort throughout the coastal watersheds, as well as within appropriate reference watersheds, involving water, sediment, and fish sampling in tandem would be necessary to demonstrate more specific methylation rates. However, without additional watershed-specific data to demonstrate a substantial decrease in the bioavailability of mercury in water or sediment, EPA has selected a conservative approach to calculate the estimated loading and necessary TMDL. The conservative assumption that 100 percent of the mercury loading is bioavailable is an implicit component of the margin of safety, which is a required element of a TMDL. This analysis assumes that reductions in loadings will lead to proportional mercury loading reductions in all media over time. Although the spatial representations and time trends predicted by the model are uncertain, the expected reduction of mercury concentrations in soil, water, sediment, and fish due to reduced loadings is sound. It should be obvious that present concentrations in fish have resulted from loadings averaged over an appropriate time (as affected by transport, transformation, and bioaccumulation processes). Further, if all loadings could be completely eliminated, the mercury concentrations in all media and fish would eventually equilibrate to very low levels, below

<table>
<tr><th>#</th><th>Comment</th><th>EPA response</th></tr>
<tr><td></td><td></td><td>concentrations of concern relative to human health. We assume that methylation/demethylation rates and food web structure will be unaffected by future mercury load reductions. Therefore, predicted mercury concentrations in all media at a location (given sufficient time to re-equilibrate) will be related to load reductions in a roughly linear manner. This approach used the best technology we have available for developing a TMDL for mercury.</td></tr>
<tr><td>6</td><td>Inorganic mercury in streams results overwhelmingly from air deposition. St. Tammany Parish has no local air permits for mercury; thus, 99.6 percent comes from outside the parish. St. Tammany Parish reviewers point out that inorganic mercury in the water bodies comes from many other sources, for which no documentation was provided or included in the TMDL calculation/allocations:

• Background soil concentrations (not provided in the TMDL)
• Background water concentrations (not provided in the TMDL)
• Headwater and Lake Pontchartrain concentrations
• Dredging operations (not mentioned in the TMDL)
• NPDES dischargers (Empirical data is available in a cited EPA-approved TMDL, but not applied in this TMDL)</td><td>EPA is aware that numerous activities outside St. Tammany Parish contribute to atmospheric mercury levels over the parish. Section 5 of the TMDL describes the programs that are expected to reduce state, national, and global atmospheric mercury levels.

Background soil data and information on dredging practices were not available during TMDL development. Water quality data is in available through the LDEQ website. Headwaters for 040906 are contained in subsegment 040905. No mercury discharge data are available from the dischargers receiving WLAs in the TMDL.

As stated above, DMR data for mercury at the facilities receiving WLAs in this TMDL are not available.

Given the time constraints placed on EPA by the Consent Decree, it was necessary that EPA use existing data. As mentioned in the TMDL, EPA is taking an adaptive management approach to these TMDLs and might revise them as new information and data become available.</td></tr>
<tr><td>7</td><td>LDEQ surface water quality standards for the State of Louisiana set the brackish water acute and chronic criteria for dissolved mercury at 2.0 ug/L (200 ng/L) and 0.012 ug/L (12 ng/L).

Table 1A
Numerical Criteria for Metals and Inorganics
(In micrograms per liter (µg/L) or parts per billion (ppb))
<table><tr><th rowspan="3">Toxic Substance</th><th colspan="6">Aquatic Life Protection</th><th rowspan="3">Human Health Protection Drinking Water Supply[a]</th></tr><tr><th colspan="2">Freshwater</th><th colspan="2">Marine Water</th><th colspan="2">Brackish Water[f]</th></tr><tr><th>Acute</th><th>Chronic</th><th>Acute</th><th>Chronic</th><th>Acute</th><th>Chronic</th></tr><tr><td>Mercury[i]</td><td>2.04[d]</td><td>0.012[e]</td><td>2[d]</td><td>0.025[e]</td><td>2[d]</td><td>0.012[e]</td><td>2.0</td></tr></table></td><td>As shown in the TMDL, most mercury loadings are attributable to atmospheric sources. Section 5.2 describes the national assurances for reducing mercury emissions.</td></tr>
</table>

#	Comment	EPA response
	Tables 3-1, 3-2, and 3-3 from the TMDL report show the available mercury data in the three subsegments of St. Tammany Parish for water and sediment.	

Table 3-1. Summary of water column data in the Lake Pontchartrain Basin

Subsegment	Station	Station name	Period of record	No. of obs.	Mercury minimum (µg/L)	Mercury maximum (µg/L)	Mercury average (µg/L)
040801	0107	Tchefuncte River west of Covington, LA	4/13/81–5/11/98	100	0.05	0.9	0.196
	0409	Tchefuncte River near Covington, LA	8/30/94–7/26/04	5	0.05	0.2	0.08
040905	0503	Bayou Liberty near Slidell, LA	8/24/95–4/19/99	3	0.05	0.05	0.05
	1077	Bayou Liberty at Hwy. 433 Bridge	7/24/01–9/13/04	1	0.05	0.05	0.05
	0422	Bayou Liberty west of Slidell, LA	7/23/07	2	0.01	0.01	0.01
040906	1076	Bayou Liberty at Bayou Paquet	9/19/01–12/19/01	No data			

Table 3-2, Available inorganic mercury sediment data for the Lake Pontchartrain Basin

Subsegment	Station	Station name	Period of record	No. of obs.	Hg minimum (mg/kg)	Hg maximum (mg/kg)	Hg average (mg/kg)
040801	0409	Tchefuncte River near Covington, LA	8/30/1994–7/26/2004	5	0.000	0.098	0.057
040905	0422	Bayou Liberty west of Slidell, LA	7/23/2007	1	0.245	0.245	0.245
040905	0503	Bayou Liberty near Slidell, LA	8/24/1995–4/19/1999	3	0.030	0.820	0.297
040403	0538	Blind River near Gramercy, LA	7/24/1996–2/2/2009	3	0.000	0.520	0.327
040905	1077	Bayou Liberty at Hwy. 433 Bridge	7/24/2001–9/13/2004	3	0.047	0.151	0.096

Table 3-3. Available organic mercury sediment data for the Lake Pontchartrain Basin

Subsegment	Station	Station name	Period of record	No. of obs.	Methyl Hg minimum (µg/kg)	Methyl Hg maximum (µg/kg)	Methyl Hg average (µg/kg)
040801	0409	Tchefuncte River near Covington, LA	5/21/2002–7/26/2004	3	0.45	1.77	1.00
040905	0422	Bayou Liberty west of Slidell, LA	7/23/2007	1	0.38	0.38	0.38
040905	1077	Bayou Liberty at Hwy. 433 Bridge	7/29/2002–9/13/2004	2	0.10	0.19	0.15

Water column mercury exceeded the chronic criteria in the majority of samples. This is certainly a result of allochthonous loading from the abundant adjacent wetlands. Additionally, sediment samples reveal that a greater potential source of organic mercury (methyl mercury) may be from the autochthonous loading of mercury-laden sediment from the stream bottoms (resuspension).

Thus, methyl mercury loading in the St. Tammany Parish subsegments appears to be from both allochthonous loading from adjacent wetlands and autochthonous internal loading from stream bottom sediments. This is not unexpected since methylation readily occurs in wetland-dominated coastal plains streams in which atmospheric mercury deposition is documented. Again, the way to reduce methyl mercury from water bodies, sediments, wetlands, and fish flesh is to control mercury emissions at their atmospheric sources.

8	St. Tammany Parish requests that EPA provide documentation for the analytical detection limits for the mercury in sediment, water column, and fish tissue analyses.	Until recently, EPA's approved method for the analysis of mercury was not sensitive enough to measure

#	Comment	EPA response
		mercury at trace levels. Consequently, there is little reliable data available on mercury loadings discharged from LPDES point sources. In 1998 EPA adopted a new analytical procedure that detects mercury at trace levels, allowing more exact data to be collected and used in determining compliance with applicable water quality standards. EPA-approved analytical methods have detection levels of 0.5 ng/L(Method 1631) and 5 ng/L (Method 245.7).
9	The subsegments listed in the mercury TMDL for St. Tammany Parish are tidally influenced; yet EPA's consultant did not use an unsteady-state modeling tool. Flow is one of the most critical simulations in any model. It influences all fate-and-transport phenomena within the waterbody, including transformations, dilution, dispersion, resuspension, and reaeration. In fact, no flows were used in the calibration or projections to formulate load reductions in the TMDL. St. Tammany Parish objects strenuously to this. Without flow data, the proposed draft TMDL is only a WLA, or LA in this case, of 99.6 percent atmospheric source mercury.	Many of the subsegments modeled do not have upstream segments, and due to the approach chosen, calculating upstream loads is not required.
10	The lower boundary condition should be in Lake Pontchartrain. Due to tidal action, water quality at lower monitoring sites at water body mouths should be similar to lake samples. However, without mercury values available for the lake, it is unknown how much is discharged from the Northshore waterways—Tchefuncte River (040801) and Bayou Liberty (040905 and 040806).	The approach chosen does not require a boundary condition.
11	Table 4-1 presents the TMDL allocations in the St. Tammany Parish subsegments. Of the approximately 40 percent mercury reductions, most of the mercury is allocated to nonpoint sources (presumably air deposition + autochthonous resuspension). **Table 4-1. Summary of TMDLs, WLAs, and LAs for Lake Pontchartrain Basin** Subsegment; Existing load lb/yr; Percent reduction; Total allowable loading lb/day; ∑ WLAs; ∑ LAs 040801: 6.01; 40%; 9.9E-03; 4.0E-04; 9.5E-03 040905: 0.49; 38%; 8.3E-04; 0.0E+00; 8.3E-04 040906: 0.59; 38%; 9.9E-04; 0.0E+00; 9.9E-04	Comment noted.

Table E-3. EPA responses to public comments received from the Lake Pontchartrain Basin Foundation

#	Comment	EPA response
General		
1	The vast majority of the mercury pollution is from atmospheric sources not addressed in this TMDL The second page of the Executive Summary acknowledges that "(a)tmospheric deposition makes up 99.6 percent of the current load." With this knowledge, the source becomes very clear—there can truly	As stated in the TMDL, air deposition is a major source. Air dischargers are covered under the Clean Air Act and Cross-State Air Pollution Rule, which are being used independent of this TMDL to reduce mercury emissions.

#	Comment	EPA response
	be no progress with mercury reductions without thoroughly addressing the atmospheric sources. Table ES-2 directly below this statement lists the subsegments, the existing loads, the total allowable loads, the WLAs, and the LAs. The existing loads are presumably based on data described in Tables 3-1, 3-2, and 3-3. Table 3-1 shows six or fewer samples per site for half of the streams, and Tables 3-2 and 3-3 show fewer than six samples per stream for all streams. These do not constitute statistically viable data sets from which valid conclusions can be drawn. The only statistically viable data sets are mercury in the water column for 040403–Blind River, 040501–Tickfaw River, 0407–Tangipahoa River, and 040801–Tchefuncte River (each with over 100 data points). From Table ES-2, the existing loads are given in pounds per year. Given that the atmospheric deposition is assumed to be 99.6 percent, with the remaining 0.4 percent as water sources (the focus of this TMDL), the water load is calculated as follows (fourth and fifth columns): Waterbody/Segment | Existing Load (lbs/yr) | # Data Points | Atmospheric Existing Load (lbs/yr, 99.6%) | Water Existing Load(lbs/yr, 0.4%) | TMDL (lbs/day) | % Reduction Amite/ 040303 | 6.65 | 5 | 6.6234 | 0.0266 | 0.016 | 15% Blind/ 040401 | 3.76 | 0 | 3.7450 | 0.0150 | 0.0059 | 42% Blind/ 040403 | 19.97 | 107 | 19.890 | 0.080 | 0.038 | 30% Tickfaw/ 040501 | 13.90 | 116 | 13.844 | 0.0556 | 0.019 | 49% Tangipahoa/ 040701 | 9.60 | 102 | 9.5616 | 0.0384 | 0.018 | 31% Tchefuncte/ 040801 | 6.01 | 105 | 5.9860 | 0.0240 | 0.0099 | 40% Liberty/ 040905 | 0.49 | 6 | 0.488 | 0.0020 | 0.00083 | 38% Liberty/ 040906 | 0.59 | 0 | 0.5876 | 0.0024 | 0.00099 | 38% The TMDL percent reductions ranged from 15 to 49 percent for the waterways. From the above table it is clear that the supposed load from water contributions is extremely small for each stream. As the water sources do not even equal 15–49 percent of the existing load, it is clear that no matter what is done to the water sources, the atmospheric sources need to be addressed to reach the target reductions.	These are described in section 5 of the TMDL.
2	Wastewater treatment plants are not adequately sampled for potential contribution The TMDL notes larger wastewater plants as a potential source of mercury. The TMDL cites a 2005 EPA study: "EPA believes it is appropriate to assume that discharges from municipal wastewater treatment plants (Standard Industrial Classification code 4952) discharging greater than 100,000 gallons per day in the subsegments contain mercury concentrations of 12 ng/L (USEPA 2005)." According to the numeric criteria given in the executive summary, 12 ng/L is the target for mercury input. This would basically mean that the wastewater treatment plants already meet the target. Why, then, are the plants assigned a load in Table 4-2? Also, the 12 ng/L contribution of wastewater treatment plants is not based on any data collected from these plants. How can a load reduction be calculated when the true load is not known? Next, many of the wastewater plants listed are pond systems, and the actual mercury in the wastewater (and not atmospheric deposition on the pond) would have to be determined accurately.	EPA and LDEQ have considerable experience in issuing permits to individual dischargers in Louisiana. Based on that experience, EPA and LDEQ have determined that only certain categories of dischargers have the potential to discharge mercury in amounts over the target concentration of 12 ng/L. As stated in the revised draft report, EPA expects LDEQ to use this information to screen dischargers with more than 12 ng/L for possible additional permit requirements, such as a mercury minimization plan. EPA has chosen to set the target concentration for

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	Finally, an important factor is not taken into account for these waterways. Although there are a handful of larger wastewater plants along these rivers, the majority of wastewater treatment is accomplished by small, individual home and commercial plants. There is a question if limits on the few large plants would actually translate into true reduction in the waterway.	mercury at 12 ng/L. This is based on data developed by facilities throughout the United States. EPA would have preferred to establish the target concentration based on actual data for discharges in Louisiana; however, data generated by the implementation of these TMDLs and other site-specific information developed by individual dischargers might be used to revise these TMDLs.
3	The TMDL does not adequately address mercury methylation in wetland environments The TMDL acknowledges that much of the land use in all waterways surveyed consists of wetlands. The TMDL states: "The Lake Pontchartrain Basin consists of vast areas of swamps and marshes, especially in the lower reaches, which contribute a large natural organic load to the waterbodies. The organic load, in turn, creates conditions conducive to the production of methyl mercury. What contribution natural sources make to the mercury impairment in this basin is not clear. Those natural conditions might not be affected by implementing the TMDLs, and more data are needed to assess the natural contributions." It is a widely known geochemical concept of mercury methylation in wetland environments. Because wetlands compose much of the land area in the affected watersheds, there needs to be some kind of quantification of this process in these watersheds. The above statement in the TMDL basically states that the proposed TMDL would potentially make no difference in the environment. Much more needs to be known about the actual inputs and the geochemical processes to get a true view of mercury movement in the south Louisiana environment.	Given the time constraints placed on EPA by the Consent Decree, it was necessary that EPA use existing data. As mentioned in the TMDL, EPA is taking an adaptive management approach to these TMDLs and might revise them as new information and data become available.
4	Many of the fish species used in the mercury sampling are migratory, so the source of mercury cannot be pinpointed. The TMDL used fish tissue samples collected from the following species: largemouth bass, rock bass, spotted bass, white bass, bowfin, black crappie, white crappie, freshwater drum, flathead catfish, blue catfish, channel catfish, warmouth, redear sunfish, smallmouth buffalo, bigmouth buffalo, bluegill, and sheepshead. Many of these fish are known to use wetland, marsh, and saltier environments at different stages in their life cycles. These species have access to and use the Pontchartrain Estuary to migrate to saltier waters during their lives. For many of these species, it cannot be assumed that the mercury in their tissues was obtained from the rivers in which they were found. The draft TMDLs for mercury in the Pontchartrain Basin are little more than an academic exercise with not much basis in reality. In much of the study, the data are not of sufficient quantity to draw statistically sound conclusions. The TMDLs fail in several aspects: • The load is acknowledged to be 99.6 percent atmospheric, yet these load reductions are not discussed. • The water column and sediment mercury loads given for the streams are based on little to no data in at least half of the streams (for water column data) and all of the streams (for sediment data).	EPA is aware that the data used to develop the TMDL are from sites outside the affected segments. As has been previously discussed, EPA is relying on the best available data provided by the State of Louisiana to develop these TMDLs. EPA contends that its approach should have an effect on mercury loading and, therefore, bioaccumulation. EPA has also stated its intention to use an adaptive management approach, which might allow these TMDLs to be updated when new data or information is made available.

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	• The reductions given range from 15 to 49 percent in each stream. Because the potential water sources are extremely small, the reduction is not achievable if the atmospheric load is not addressed. • Large wastewater treatment plants are given as a source, but there are no calculations of their actual loads into the waterways. • Mercury methylation in wetland environments is acknowledged, yet no calculations of the actual impacts on the systems are made. • Many of the fish used in the study are migratory and cannot be conclusively proven to have accumulated the mercury in the rivers in which they were found.	