

RECORD OF DECISION FOR EPA ACTION ON LOUISIANA'S CLEAN WATER ACT 2012 § 303(d) LIST

EPA has reviewed the State of Louisiana's 2012 § 303(d) List submission, and has concluded that the state developed its § 303(d) List in partial compliance with § 303(d) of the Clean Water Act (CWA) and 40 CFR 130.7. EPA has determined that Louisiana's submission does not include all waters that meet § 303(d) listing requirements. Therefore, EPA is partially approving and proposing to partially disapprove Louisiana's list submission. The proposed 2012 § 303(d) List includes the list submitted by the State of Louisiana, plus three Gulf of Mexico coastal segments located west of the Mississippi River mouth, proposed for addition by EPA because the applicable numeric water quality standards marine criterion for dissolved oxygen (DO) was not attained in these segments.

Administrative Record

1. Date of Transmittal Letter "2012 Water Quality Integrated Report" From the State: February 1, 2013, Date of Receipt by EPA: February 14, 2013.
2. Louisiana's 2012 Integrated Report Methods and Rationale document. January 2012. Available at <http://www.deq.louisiana.gov/portal/Portals/0/planning/305b/2012/2012%20IR%20Methods%20and%20Rationale%20FINAL%201-17-12.pdf>
3. Guidance for Water Quality Based Decisions: The TMDL Process. EPA 440/4-91-001. April 1991. Available at <http://www.epa.gov/waterscience/library/modeling/SASD0109.pdf>.
4. EPA 2002 Integrated Water Quality Monitoring and Assessment Report Guidance. November 19, 2001. Available at <http://www.epa.gov/owow/tmdl/2002wqma.html>.
5. 2012 State of Louisiana Clean Water Act § 303(d)/§ 305(b) Integrated Report. Available at <http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2012IntegratedReport.aspx>
6. Louisiana Administrative Code Title 33 Part IX. Subpart 1, Chapter 11. Louisiana Surface Water Quality Standards.
7. EPA Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act. July 29, 2005. Available at http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/2006IRG_index.cfm.
8. EPA Decision Document for Louisiana's 2008 § 303(d) List. Available at <http://www.epa.gov/region6/water/npdes/tmdl/index.htm#303dlists>
9. EPA Decision Document for Louisiana's 2010 § 303(d) List. Available at <http://www.epa.gov/region6/water/npdes/tmdl/index.htm#303dlists>
10. Louisiana Universities Marine Consortium (LUMCON), Southeast Area Monitoring and Assessment Program (SEAMAP), Louisiana Department of Wildlife and Fisheries (LDWF), EPA Gulf Breeze Laboratory, dissolved oxygen data.
11. Environmental Response Management Application Gulf Response. <http://gomex.erma.noaa.gov/erma.html#x=-88.25810&y=27.03211&z=6&layers=17770+5723+20442+20579>.
12. EPA 2006. Memorandum from Diane Regas, Director, Office of Wetlands, Oceans, and Watersheds, Office of Water, EPA Headquarters, to Water Division Directors, Regions 1 – 10, "Information Concerning 2008 Clean Water Act Section 303(d), 305(b) and 314 Integrated Reporting and Listing Decisions".

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Abbreviations

CWA – Clean Water Act
CFR – Code of Federal Regulations
EPA – Environmental Protection Agency
LDEQ – Louisiana Department of Environmental Quality
LDWF – Louisiana Department of Wildlife and Fisheries
LUMCON -- Louisiana Universities Marine Consortium
NOAA -- National Oceanic and Atmospheric Administration
TMDL -- Total Maximum Daily Loads
SEAMAP -- Southeast Area Monitoring and Assessment Program
WQLS – Water Quality Limited Segments

A. Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and proposed partial disapproval of Louisiana's 2012 § 303(d) List of water quality limited segments (WQLSs) requiring Total Maximum Daily Loads (TMDLs). The following sections identify those key elements to be included in the list submission based on the Clean Water Act and EPA regulations. See 40 CFR § 130.7. EPA reviewed the methodology used by the state in developing the § 303(d) List and the state's description of the data and information it considered. EPA's review of Louisiana's 2012 § 303(d) List is based on whether the state reasonably considered all existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

B. Statutory and Regulatory Background

1. Identification of WQLSs for Inclusion on § 303(d) List

Section 303(d)(1) of the CWA directs states to identify those waters within its jurisdiction for which effluent limitations required by § 301(b)(1)(A) and (B) of the CWA are not stringent enough to assure attainment with any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The § 303(d) listing requirements apply to waters impaired by point and/or nonpoint sources, pursuant to EPA's long standing interpretation of § 303(d) of the CWA.

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology based effluent limitations required by the CWA; (2) more stringent effluent limitations required by state or local authority; and (3) other pollution control requirements required by state, local, or federal authority. See 40 CFR § 130.7(b)(1).

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2. Consideration of Existing and Readily Available Water Quality Related Data and Information

In developing § 303(d) lists, the states are required to assemble and evaluate all existing and readily available water quality related data and information, including, at a minimum, all existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent § 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any § 319 non-point assessments submitted to EPA. See 40 CFR § 130.7(b)(5). In addition to these minimum categories, the states are required to consider any other data and information that are existing and readily available. EPA's 1991 "Guidance for Water Quality Based Decisions" describes categories of water quality related data and information that may be existing and readily available. See Administrative Record 3.

In addition to requiring the states to assemble and evaluate all existing and readily available water quality related data and information, EPA regulations at 40 CFR § 130.7(b)(6) require the states to provide documentation to EPA supporting the state's decisions to list or not list particular waters. Such documentation must include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the EPA Regional Administrator. See 40 CFR § 130.7(6)(i)-(iv). While the states are required to evaluate all existing and readily available water quality related data and information in deciding whether to list their waters, 40 CFR § 130.7(6) allows states to decide to use or not use particular data or information in determining whether to list particular waters. However, 40 CFR § 130.7(b)(6)(iii) requires states to provide a rationale for any decision not to use particular data and information.

3. Priority Ranking

EPA regulations codify and interpret the requirement in § 303(d)(1)(A) of the CWA that the states establish a priority ranking for listed waters. The regulations at 40 CFR § 130.7(b)(4) require the states to prioritize waters on their § 303(d) lists for TMDL development, to identify those WQLSs targeted for TMDL development in the next two years, and to identify pollutants causing or expected to cause violations of applicable water quality standards. In prioritizing and targeting waters, the states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See § 303(d)(1)(A) CWA. As long as these factors are taken into account, the CWA provides that the states establish priorities. The states may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats; recreational, economic, and aesthetic importance of particular waters; degree of public interest and

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support; and the state or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and Administrative Record 3.

4. Public Participation

The process for identifying WQLSs requires the involvement of the general public commonly referred to as the *public participation process*. The *public participation process* is intended to foster public awareness and open processes of government decision making. See 40 CFR § 25.1(a). At a minimum, the *public participation process* must provide, encourage and assist the participation of the public or segments of the public which may have a particular interest in a given program or decision. See 40 CFR § 25.3(a) and § 25.4(b)(5). The public notification must be provided far enough in advance of agency action to permit time for public response which in general should not be less than 30 days. See 40 CFR § 25.4(c). The state's *public participation process* is to be clearly described in the state Continuing Planning Process (CPP). See 40 CFR § 130.7(a).

C. Review of Louisiana's Submission

In accordance with CWA § 303(d), 40 CFR § 130.7 and EPA's listing guidance, EPA reviews a state's § 303(d) List to ensure that the state properly listed all waters not attaining state water quality standards, taking into consideration whether the state's assessment and listing methodology was used to prepare the list, whether the assessment and methodology is consistent with the state's water quality standards and scientifically sound, and whether the state reasonably considered all existing and readily available information. See Administrative Record 4. EPA reviewed Louisiana's description of the data and information it considered, its methodology for identifying waters, rationales for excluding waters from the 2012 § 303(d) List and the state's responsiveness summary. See Administrative Record 5. As a result of its review, EPA has concluded that the state developed the Louisiana 2012 § 303(d) List in partial compliance with § 303(d) of the CWA and 40 CFR § 130.7, but is proposing partial disapproval of Louisiana's 2012 § 303(d) List submission. Although EPA has concluded that the state properly assembled and evaluated all existing and readily available data and information, EPA determined the state's decision not to list three coastal segments not meeting the applicable dissolved oxygen criterion is inconsistent with federal listing requirements. Available data and information led EPA to conclude that these waters are water quality limited under Louisiana Water Quality Standards (LAC 33:IX.1101-1123) and are required to be listed pursuant to § 303(d) of the CWA. Therefore, EPA is proposing to add these waters to Louisiana's 2012 § 303(d) List and will seek public comment on these proposed additions.

As part of the state's ambient water quality assessment process, water quality standards subsegments, as defined in Louisiana's Surface Water Quality Standards (LAC 33:IX.1101-1123), are evaluated for use impairment determination. Subsegments are stream reaches, lakes, or reservoirs defined by hydrologic boundaries, geology, topography, incoming tributaries, and surrounding land use/ land management. See Administrative Record 2.

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For the purpose of listing waters under 40 CFR § 130.7(b), the term water quality standard applicable to such waters and applicable water quality standard refer to those water quality standards established under § 303 of the CWA, including numeric criteria, narrative criteria, waterbody uses, and antidegradation. See 40 CFR § 130.7(b)(3).

The listing methodology employed for Louisiana's 2012 § 303(d) List describes a set of decision criteria for identifying water quality limited segments. In general, waters were listed in cases where a certain percentage of samples exceeded the applicable water quality criteria over a four year period. The applicable percentages are provided in Louisiana's 2012 Integrated Report and § 303(d) List Assessment Methods and Rationale document. See Administrative Record 2.

2. Consideration of Existing and Readily Available Water Quality Related Data and Information

EPA has concluded that the state properly assembled all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR § 130.7(b)(5). However, based on its review of the data and information assembled by the state, EPA has concluded that the state's decision not to list certain coastal segments not meeting the dissolved oxygen criterion is inconsistent with federal listing requirements. As discussed below, the available data and information led EPA to conclude that these waters are water quality limited under Louisiana Water Quality Standards and are required to be listed pursuant to § 303(d) of the CWA. Therefore, EPA is proposing to add these water quality limited segments to Louisiana's 2012 § 303(d) List and will be seeking public comment on these proposed additions.

As suggested by EPA guidance, Louisiana chose to combine the state's 2012 § 305(b) report and § 303(d) List into a single report following EPA's listing guidance titled "Guidance for the 2006 Integrated Assessment and Reporting on the Quality of States' Waters" ("Integrated Report"). See Administrative Record 7. A single assessment methodology for the Integrated Report was used for both the § 305(b) reporting and the § 303(d) listing activities. Louisiana's Integrated Report divided waters assessed into five categories as recommended by EPA's 2006 guidance. Category 5, which is the Louisiana 2012 § 303(d) List was also included in the report. Category 5 is the only portion of the Integrated Report which EPA approves and disapproves. See Administrative Record 7.

While EPA reviewed Louisiana's listing methodology, EPA's partial approval of the state's listing decisions should not be construed as concurrence with or approval of the listing methodology. EPA is not required to take action on the listing methodology. See 40 CFR § 130.7. EPA considers a state's methodology in its review of a state's listing decision to the extent it reflects a reasonable interpretation of the state's water quality standards and sound science. EPA's decision to partially approve Louisiana's listing decisions is based on EPA's review of the data and information submitted concerning individual waters and the state's evaluations of those waters. While EPA considered Louisiana's listing methodology as part of its review, its evaluation was intended to

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determine only whether the state had reasonably identified all waters that meet federal listing requirements specified in § 303(d) of the CWA and 40 CFR § 130.7. The state's applicable water quality standards are the basis for determining whether a waterbody is impaired by a pollutant and therefore included on the state's § 303(d) List (Category 5). See 40 CFR § 130.7(b)(3).

3. Priority Ranking

EPA reviewed the state's priority ranking of listed waters for TMDL development, and concludes that the state properly took into account the severity of pollution and the uses to be made of such waters. EPA neither approves nor disapproves the states' priority ranking submittal and is under no obligation per 40 CFR 130.7(b)(4) or the CWA to include a priority ranking or schedule for TMDL development to waters added to a states' § 303(d) List. However, in order to communicate EPA's commitment to addressing Hypoxia in the Gulf of Mexico, EPA is proposing an assigned priority ranking and associated schedule for TMDL development to the proposed three added segments.

In making the determination to assign a priority ranking and schedule to the three coastal segments, EPA considered both the designated uses and the severity of pollution as required by the CWA and federal regulations. See CWA § 303(d)(1)(A) and 40 CFR 130.7(b)(4). EPA does not dispute the dissolved oxygen problem in these three coastal segments is severe. As EPA noted in its proposal to list the waters, the segments show a high proportion (70%) of minimum dissolved oxygen values well below the dissolved oxygen criteria and often times below hypoxic levels. Dissolved oxygen criteria are assigned to be protective of the segments' Fish and Wildlife Propagation Use, and existing data show the Wildlife and Propagation use is not currently being met. Further, EPA understands the importance of these waters to Louisiana's fishing industry and to the state's economy as a whole. EPA is fully committed to addressing the water quality issues present in these three coastal segments, as well as the overall problem of hypoxia in the Northern Gulf of Mexico as quickly as possible. However, this issue will require complex analysis before a TMDL can be developed, and the state will need sufficient time to collect the data and information necessary to complete such an analysis.

Therefore, in consideration of the scope and severity of the problem and the resulting need to allow sufficient time to complete a scientifically sound TMDL, EPA assigned each of the three added coastal segments a priority ranking of not later than 8 to 13 years, which is consistent with *EPA's 2006 Integrated Reporting Guidance* for establishing timelines for TMDL development in water quality limited segments. EPA encourages the State of Louisiana to collect information and data, as well as any other relevant precursors to TMDL development that may be related to interpretation or refinement of relevant water quality standards without delay and to complete the TMDL as expeditiously as possible, with the expectation that the TMDL could be completed within 8 years since the waters were identified as being impaired. See Administrative Record Numbers 8 and 9.

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4. Public Participation

EPA has determined that Louisiana took reasonable steps to assemble and evaluate all existing and readily available water quality-related data and information as required by 40 CFR § 130.7, including data and information from members of the public and government agencies via the public participation for Louisiana's 2012 Integrated Report by the State of Louisiana as outlined below:

- a. Public notice posted on January 25, 2012 requesting relevant data, comments on Louisiana's draft 2012 § 303(d) List and on the rationale for development of Louisiana's draft 2012 § 303(d) List. The public notice provided a 30 day comment period. These requests were also posted on LDEQ's website. Notice was placed in newspapers on January 25, 2012. Notices were placed in the following newspapers:
 - Baton Rouge, The Advocate (official state journal)
 - Lake Charles American Press
 - Lafayette, The Advertiser
 - Monroe News Star
 - New Orleans, The Times-Picayune
 - Shreveport, The Times
 - Alexandria, The Town Talk
 - The Houma Courier
- b. A second public notice posted on December 19, 2012 outlining revisions to the draft 2012 § 303(d) List made after the closure of the public notice identified above. The second public notice pertained only to a small subset of waters in which revisions were made. The public notice provided a 30 day comment period and was posted on the LDEQ website.
- c. Following conclusion of the public comment period and assessment of submitted data LDEQ prepared a response to comments. This document was included in the Integrated Report submittal to EPA on February 14, 2013. The response to comments and proposed Integrated Report was also posted on LDEQ's website. See Administrative Record 5.

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D. Proposed Decision to Add Water Quality Limited Segments (120806, 070601, and 021102) to the Louisiana 2012 § 303(d) List for Marine Dissolved Oxygen.

EPA is proposing the addition of three (3) coastal segments west of the Mississippi River mouth to Louisiana’s 2012 § 303(d) List based on EPA’s determination that these three (3) coastal waters are not meeting the state’s marine dissolved oxygen criterion (See Table 1) and that the state’s decision not to list these coastal segments for marine dissolved oxygen is thus inconsistent with 40 CFR § 130.7(b).

Table 1. EPA’s proposed additions to Louisiana’s § 303(d) List.

Segment ID	LA Segment Number	Marine Criteria Exceedance
Terrebonne Basin Coastal Bays and Gulf Waters to the State three-mile limit	120806	Oxygen, Dissolved
Mississippi River Basin Coastal Bays and Gulf Waters to the State three-mile limit	070601	Oxygen, Dissolved
Barataria Basin Coastal Bays and Gulf Waters to the State three-mile limit	021102	Oxygen, Dissolved

EPA previously added coastal segments 120806, 070601 and 021102 to both the Louisiana 2008 and 2010 § 303(d) Lists. Although the state agreed with EPA in 2008 and 2010 that the three coastal segments were not meeting the applicable marine dissolved oxygen criterion, the state had placed these water quality limited segments in Category 4b of its Integrated Reports instead of Category 5 (the state’s § 303(d) List). EPA’s 2008 Integrated Reporting Clarification Memorandum defines Category 4(b) as appropriate for water quality limited segments where a TMDL is not needed because “other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time.” The state cited the ongoing efforts associated with the 2008 Gulf Hypoxia Action Plan to demonstrate that other required control measures were stringent enough to implement applicable water quality standards. EPA disapproved the state’s placement of the segments in Category 4(b) and instead added coastal segments 120806, 070601 and 021102 to Category 5 - the state’s 303(d) List. See Administrative Records 8 and 9.

In its current 2012 Integrated Report, the state has placed coastal segments 120806, 070601 and 021102 in Category 3, which is defined in EPA’s listing guidance as appropriate for waters for which “there is insufficient available data and/or information to make a use support determination.” See Administrative Record No 7. EPA disagrees with the state’s assertion that there is insufficient available data and/or information to make a finding of non-support pursuant to 40 CFR § 130.7(b). The state’s justifications for placing these waters in

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Category 3 are laid out in its 2012 Integrated Report and § 303(d) List Methods and Rationale document as well as the 2012 State of Louisiana Clean Water Act § 303(d)/§ 305(b) Integrated Report. See Administrative Records 2 and 5. These justifications and EPA's responses are as follows:

1. Insufficient Data to List Coastal Waters

In Louisiana's 2012 Integrated Report, the state writes:

“LDEQ evaluated the data sets used by USEPA and determined the data sets are limited both temporally and geographically. LDEQ's data quality objectives contained in the ambient monitoring QAPP approved by USEPA outline a minimum of five data points throughout a calendar year for water quality assessment purposes. The data sets used by USEPA only accounted for one day per year at seven of the eight sites located within Louisiana territorial waters. As a result, these seven sites only had one set of water column DO data rather than the required minimum of five data sets throughout the calendar year. Additionally, these seven sites were only sampled during the critical summer period. Only one of the eight sites within Louisiana's three-mile limit was sampled more than once during the same year. For 2007 this site was sampled ten times throughout the year but not consistently every month. During 2007 the lowest DO reading at any depth for this site was 5.34 mg/L, occurring in June. According to LDEQ's assessment protocols, the site was fully supporting the DO criteria for 2007, the only sampling year within the normal four-year period of record for the 2012 IR. All other months sampled at the site also had DO values above 5.0 mg/L, the water quality criteria for these subsegments, at all tested depths.”

EPA does not agree that its decision to add the three coastal waters (segments 021102, 070601, 120806) to Louisiana's 2008 and 2010 § 303(d) Lists for low dissolved oxygen was based on limited or insufficient data. As described in EPA's 2008 and 2010 Louisiana § 303(d) Lists Records of Decision, approximately 231 dissolved oxygen measurements were collected at over 53 stations within state territorial waters. See Administrative Record 8 and 10. Although Louisiana Universities Marine Consortium (LUMCON), EPA Gulf Ecology Division (EPA Gulf Breeze), and Louisiana Department of Wildlife and Fisheries (LDWF) data were generally collected during the summer critical period, Southeast Area Monitoring and Assessment Program (SEAMAP) data was collected during various months throughout the calendar year. Given that LDEQ routinely uses 12 or less dissolved oxygen samples collected in a given year to make use support decisions, EPA determined that the data from SEAMAP, LUMCON, EPA Gulf Breeze and LDWF was adequate to determine non-attainment of the marine dissolved oxygen criterion. Further, there is nothing in the data and information included in the state's 2012 Integrated Report to indicate that conditions have changed such that the state's marine criterion for dissolved oxygen is now being attained in these three segments.

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Additionally, in the 2008 and 2010 Louisiana Integrated Reports, the state found the data sufficient to identify the coastal segments as impaired or water quality limited. As discussed above, in 2008 and 2010, the state placed the coastal segments 120806, 070601 and 021102 into Category 4b. See Administrative Records 8 and 9. Category 4b is defined in EPA's 2006 IR Guidance to include waters that are impaired but other control measures obviate the need for a TMDL. See Administrative Record 7. Therefore, the state's 2012 determination that data are inadequate to list coastal segments 120806, 070601 and 021102 is inconsistent with the state's 2008 and 2010 Integrated Reports in which the state found the same data sufficient to identify the segments as not meeting the applicable marine dissolved oxygen criterion.

2. Stratified Dissolved Oxygen Criteria for Coastal Waters

In Louisiana's 2012 Integrated Report, the state writes:

“USEPA and LDEQ agree that depth-stratified dissolved oxygen criteria should be investigated for application in Louisiana coastal waters. The lack of appropriate and promulgated dissolved oxygen criterion specific to the deeper waters of coastal Louisiana subsegments resulted in inaccurate assessments. It is well documented that deep water coastal areas experience low dissolved oxygen due to stratification effects without causing impairment to aquatic life uses. For example, the Chesapeake Bay dissolved oxygen criteria guidance allows dissolved oxygen concentrations of 1.0 mg/L for deep-channel seasonal refuge use from June 1 – September 30 (USEPA 2003). The low dissolved oxygen values are specific for protection of benthic infaunal and epifaunal worms and clams living in the deep unconsolidated sediments of the bay, conditions similar to those found at the bottom of the deeper waters of coastal Louisiana. In addition to deep-channel habitats, the Chesapeake Bay guidance outlines deep-water seasonal fish and shellfish use criteria of a 30-day mean of greater than 3 mg/L, a one-day mean of greater than 2.3 mg/L, and an instantaneous minimum of greater than 1.7 mg/L for June 1 – September 30 to protect aquatic life uses (USEPA 2003).

The detailed and low dissolved oxygen criteria recommendations outlined in the guidance for the Chesapeake Bay point to the need for the same level of effort to evaluate appropriate and protective dissolved oxygen criteria in Louisiana's Gulf Coast waters. Until further investigation into the applicability of stratified dissolved oxygen criteria for Louisiana coastal waters can be accomplished, insufficient data and information remain a concern in conducting accurate water quality assessments.”

EPA agrees that in the future depth stratified or seasonal dissolved oxygen criteria should be investigated for application in Louisiana coastal waters. However, for the purpose of identifying water quality limited segments, EPA must apply the state's current water quality standards established under § 303 of the Clean Water Act, including numeric criteria, narrative criteria, and waterbody uses. See 40

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CFR § 130.7(a)(3). Therefore EPA's proposed decision to add the coastal waters to the list was based on current Louisiana Water Quality Standards, 33 LAC Section 1113.C.3.c

3. Limited Areal Extent of Hypoxic Zone in Coastal Subsegments

In Louisiana's 2012 Integrated Report, the state writes:

“As illustrated in NOAA's 2009 hypoxic zone map (Figure 3.2.1) [*not included*] the area of the subsegments encroached upon by the Gulf of Mexico hypoxic zone is minimal. Subsegment 021102 shows approximately 9.4% of the subsegment area is possibly impacted by the hypoxic zone. For subsegments 070601 and 120806, 8.6 % and 2.6%, respectively, of the subsegment areas are possibly impacted. By contrast, the map illustrates the vast majority of the hypoxic zone lies outside of Louisiana territorial waters and thus would be unaffected by any TMDL implementation measures occurring within the subsegments in question.”

EPA recognizes that most of the hypoxic zone typically occurs outside of Louisiana's territorial waters. Additionally, EPA recognizes that the boundaries and breadth of the hypoxic zone are dynamic and the scale to which the hypoxic zone encroaches into Louisiana territorial waters is variable. Nevertheless, the state water quality standards apply throughout the entirety of the state coastal segments. If any applicable water quality standard is not attained in any portion of a segment, the segment must be identified as water quality limited.

A total of 231 samples collected at 53 stations in state territorial waters show that the percentage of minimum dissolved oxygen values in each of the three segments fall below the Louisiana marine criterion of 5 mg/l minimum greater than the 10% exceedance rate allowed. See Administrative Records 8 and 9. Based on these data, EPA determined that coastal segments 120806, 070601 and 021102 should be added to the Louisiana 2008 and 2010 § 303(d) Lists. There is nothing in the data and information included in the state's 2012 Integrated Report to indicate that conditions have changed such that the state's marine criterion for dissolved oxygen is now being attained in these three coastal segments. Thus, based on available data and information, EPA has determined that these three waters are not meeting the state's marine dissolved oxygen criterion and EPA is proposing to add these three water body/ pollutant combinations to the state's 2012 § 303(d) List.

4. Coastal Fisheries

In Louisiana's 2012 Integrated Report, the state writes:

“NOAA reports routinely indicate excellent coastal fisheries in Louisiana. The Louisiana coast remains one of the most productive fisheries in the Gulf and the United States as a whole (NOAA 2011). Based on commercial landings

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for 2009 Louisiana's reported catch (528,071 metric tons) was over five times that of the nearest Gulf Coast state, Mississippi, which reported 104,456 metric tons. Texas reported 45,132 metric tons while Florida reported 27,904 metric tons. For 2010, Louisiana reported 455,762 metric tons; Mississippi 50,459 metric tons; Texas 40,779 metric tons; and Florida 28,360 metric tons (NOAA 2011). Across the United States, Louisiana was second only to Alaska in total metric tons of commercial fisheries, with Alaska bringing in 1,971,990 metric tons to Louisiana's 455,762 metric tons in 2010. The third highest state was Virginia with 224,565 metric tons, less than half of Louisiana's total for the same year (NOAA 2011).

In terms of port landings (million pounds), Louisiana had two of the top five and three of the top ten port landings for 2009 and 2010. For the same period, Louisiana had six of the top 50 ports, second only to Alaska with eleven. Four of the six ports are based near fisheries for the three coastal subsegments placed on the 303(d) by EPA. Alaska had three of the top ten ports followed by California (two), Virginia (one), and Massachusetts (one). Notably, Louisiana's leading port for commercial landings, Empire-Venice, is located at the mouth of the Mississippi River (NOAA 2011). In 2009 and 2010 Louisiana was second only to Florida in terms of pounds and number of fish harvested for marine recreational fisheries (NOAA 2010). Many marine recreational fishing trips are based in the coastal waters of the Barataria, Terrebonne, and Mississippi River coastal waters.

The coastal waters considered in the NOAA report include the three subsegments in question, 021102, 070601, and 120806, where much of Louisiana's commercial and recreational fishing occurs. Based on the preceding NOAA reports of commercial and recreational fisheries, the fish and wildlife propagation use in Louisiana's coastal waters is fully supported and not impaired by the Gulf hypoxic zone."

EPA does not agree that National Oceanic and Atmospheric Administration (NOAA) reports of commercial fishing landings in the Gulf of Mexico indicate full use support in the three coastal segments. For the purpose of identifying water quality limited segments, EPA applies the state's current water quality standards established under § 303 of the Clean Water Act, including numeric criteria, narrative criteria, and waterbody uses. See 40 CFR § 130.7(a)(3). As discussed above, based on data and information showing that coastal segments 120806, 070601 and 021102 are not attaining the state's current water quality criterion for dissolved oxygen established in the Louisiana Water Quality Standards, 33 LAC Section 1113.C.3.c., EPA added these segments to Louisiana's 2008 and 2010 § 303(d) Lists. See Administrative Records 8 and 9. There is nothing in the data and information included in the state's 2012 Integrated Report to indicate that conditions have changed such that the state's marine criterion for dissolved oxygen is now being attained in these three coastal segments. Thus, based on available data and information, EPA has determined that these three waters are not meeting the state's marine dissolved oxygen criterion and

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EPA is proposing to add these three water body/ pollutant combinations to the state's 2012 § 303(d) List.

5. Modeling Studies

In Louisiana's 2012 Integrated Report, the state writes:

“Studies conducted by the U.S. Geological Survey (USGS) using the SPARROW model (Alexander et al. 2008) have clearly shown that only a small percent of the Mississippi River's nutrient flux to the Gulf is derived from Louisiana (only 1.7% for total nitrogen and 2.4% for total phosphorus). As illustrated in Figure 3.2.2 [*not included*] showing phosphorus flux into the Gulf (Alexander et al. 2008), Louisiana waters do not significantly impact the hypoxic zone; the map for nitrogen flux into the Gulf is similar. The same USGS study pointed out that only 9% of nitrogen and 12% of phosphorus loadings to the Gulf are derived from urban and population-related sources; the remaining nitrogen loadings (91%) and phosphorus loadings (88%) come from agricultural sources, natural sources, and atmospheric deposition (nitrogen only) none of which have any established discharge limits.

The USGS study highlights the need for corrective actions other than TMDL-derived load allocations aimed only at regulated dischargers in Louisiana to address Gulf hypoxia. Waste-load allocations placed upon dischargers in these three subsegments or elsewhere in Louisiana will have a negligible impact on the Gulf of Mexico hypoxic zone, yet significant impact on Louisiana's permitting program as outlined below.

- Master General Permits would have to be modified.
- 58 facilities may be affected if TMDLs are limited to the three listed subsegments (021102, 070601, 120806).
- 2,103 facilities may be affected if TMDLs are basin-wide for the three basins (Mississippi, Barataria, Terrebonne) bordered by the three listed subsegments.
- 2,190 facilities may be affected if TMDLs account for Atchafalaya Basin input.
- 11,599 facilities may be affected if TMDLs account for state-wide watershed inputs; certainly a potential considering all of Louisiana drains to the Gulf.”

EPA agrees that a majority of the nutrient loads to the Gulf of Mexico originate in the upper Mississippi River watershed. However, EPA does not agree that the source of nutrient loads should be considered when making a decision of non-attainment of the Louisiana marine dissolved oxygen criterion. For the purpose of identifying water quality limited segments, EPA applies the state's current water quality standards established under § 303 of the Clean Water Act, including numeric criteria, narrative criteria, and waterbody uses. See 40 CFR § 130.7(a)(3).). As discussed above, based

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on data and information showing that coastal segments 120806, 070601 and 021102 are not attaining the state's current water quality criterion for dissolved oxygen established in the Louisiana Water Quality Standards, 33 LAC Section 1113.C.3.c., EPA added these segments to Louisiana's 2008 and 2010 § 303(d) Lists. See Administrative Records 8 and 9. There is nothing in the data and information included in the state's 2012 Integrated Report to indicate that conditions have changed such that the state's marine criterion for dissolved oxygen is now being attained in these three coastal segments. Thus, based on available data and information, EPA has determined that these three waters are not meeting the state's marine dissolved oxygen criterion and EPA is proposing to add these three water body/ pollutant combinations to the state's 2012 § 303(d) List.

6. Total Maximum Daily Loads for Coastal Subsegments

In Louisiana's 2012 Integrated Report, the state writes:

“Recent studies point to additional variables beyond simple nutrient flux that influence the timing and extent of hypoxia in Gulf waters. The causes of hypoxia in Gulf waters, summarized by Bianchi et al. (2010), show many factors other than simple nutrient flux can also impact the timing and extent of hypoxia in the Gulf. Other factors include the strength of the pycnocline limiting oxygenation of deeper waters, seasonal current variability, seasonal variations in wind, small scale daily and hourly variation in factors affecting ventilation of deep waters, organic carbon and suspended sediment loading from the Mississippi and Atchafalaya Rivers, oxygen depletion caused by sediment loads on the bottom, flow rate of the rivers, and marsh loss and restoration efforts (Bianchi et al 2010). While none of these factors negate the significant impact of nutrients from the mid and upper Mississippi River Basin, they do highlight the need for additional studies to determine suitable depth-stratified dissolved oxygen criteria and assessment procedures in all Gulf subsegments of Louisiana. Any action to reduce the hypoxic zone in the Gulf of Mexico must address the upstream sources entering the Mississippi River from outside of Louisiana.”

EPA acknowledges that variables beyond nutrients may impact the timing and extent of hypoxia in Gulf waters. EPA agrees that in the future depth stratified or seasonal dissolved oxygen criteria should be investigated for application in Louisiana coastal waters. Additionally, EPA agrees that a majority of the nutrient loads to the Gulf of Mexico originate in the upper Mississippi River watershed. However, for the purpose of identifying water quality limited segments, EPA applies the state's current water quality standards established under § 303 of the Clean Water Act, including numeric criteria, narrative criteria, and waterbody uses. See 40 CFR § 130.7(a)(3). As discussed above, based on data and information showing that coastal segments 120806, 070601 and 021102 are not attaining the state's current water quality criterion for dissolved oxygen established in the Louisiana Water Quality Standards, 33 LAC Section 1113.C.3.c., EPA added these segments to Louisiana's 2008 and

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2010 § 303(d) Lists. See Administrative Records 8 and 9. There is nothing in the data and information included in the state's 2012 Integrated Report to indicate that conditions have changed such that the state's marine criterion for dissolved oxygen is now being attained in these three coastal segments. Thus, based on available data and information, EPA has determined that these three waters are not meeting the state's marine dissolved oxygen criterion and EPA is proposing to add these three water body/ pollutant combinations to the state's 2012 § 303(d) List.

7. Partnership Efforts to Address Gulf Hypoxia

In Louisiana's 2012 Integrated Report, the state writes:

“Addressing Gulf hypoxia will, at a minimum, require a multi-state and regional effort. USEPA must proceed in a cohesive, unified manner in addressing the Gulf hypoxia issue and work to gain agreement among states for implementing measurable water quality improvement strategies and provide funding or other incentives to gain participation by unregulated sectors that are significant contributors to Gulf hypoxia. USEPA should therefore support, promote and expand on the process already established by the Mississippi River/Gulf of Mexico Watershed Nutrient (Hypoxia) Task Force (“Hypoxia Task Force”). Multiple federal/tribal (7) and state agencies (12) have invested significant resources participating in the Hypoxia Task Force and developing action plans to reduce and control Gulf hypoxia and improve Mississippi River Basin water quality. The actions outlined in the Hypoxia Action Plan are the answer to reducing the anthropogenic impact on Gulf hypoxia (Gulf Hypoxia Action Plan 2008).”

EPA agrees that addressing the cause of hypoxia will require a multi-state and regional effort and that the Gulf of Mexico Hypoxia Action Plan provides a framework for states to progress towards the goal of reducing nutrient loads to the Gulf of Mexico. However, as documented in EPA's Louisiana 2008 § 303(d) List Record of Decision, the Hypoxia Action Plan does not obviate the need for a TMDL. See Administrative Record 8. Additionally, the process established by the Nutrient Task Force does not abrogate the requirements for state development and EPA approval or disapproval of § 303(d) lists of impaired waters, based on existing regulations. Because available data and information show these three waters to be water quality limited under the state's current water quality standards, EPA is proposing they be added to the state's 2012 § 303(d) List.

In summary, EPA has determined that coastal segments 120806, 070601 and 021102 have been shown to have pollutant concentrations exceeding applicable water quality criteria, resulting in a finding of non-support pursuant to 40 CFR § 130.7(b). Based on available data and information, EPA has concluded that these waters are not meeting the marine dissolved oxygen criterion established under Louisiana Water Quality Standards, 33 LAC Section 1113.C.3.c. As a result, EPA is proposing to add coastal segments

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120806, 070601 and 021102 to the Louisiana_2012 § 303(d) List as impaired for dissolved oxygen.

E. Administrative Record Supporting This Action

In support of this decision to propose disapproval of the state's listing decisions, EPA carefully reviewed the materials submitted by the state with its § 303(d) listing decision. The administrative record supporting EPA's decision comprises materials submitted by the state, copies of Louisiana's 2012 § 303(d) List, associated federal regulations, and EPA guidance concerning preparation of § 303(d) lists, and this Record of Decision. EPA determined that the materials submitted by the state provided sufficient documentation to support our analysis and findings. The state may have compiled and considered additional materials (e.g., data and water quality analysis reports) as part of its list development process that were not included in the materials submitted to EPA. EPA did not consider these additional materials as part of its review of the listing submission. It was unnecessary for EPA to consider all of the materials considered by the state in order to determine that the state partially complied with the applicable federal listing requirements. Moreover, federal regulations do not require the state to submit all data and information considered as part of the listing submission.