# 304(a) Criteria Recommendation Adoption Process and Considerations Louisiana

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# Background

- The review of all applicable new or updated federally recommended 304(a) criteria recommendations is a requirement of the triennial review process; see 40 CFR 131.20(a).
- In addition to the triennial review process, considerations for the criteria adoption process can serve as validation checks on NPDES permit compliance and integrated reporting.
- Existing NPDES toxic controls provide general protection to surface waters from point source pollution. The adoption of site-specific 304(a) criteria can provide added protection.

# Two Review Processes

- In context with the **triennial review process**, considerations for criteria adoption differ based on whether or not there are existing state surface water quality criteria for a given 304(a) criteria recommendation.
  - 304(a) criteria recommendations **without** state water quality criteria follow an **extensive** review process.
  - 304(a) criteria recommendations **with** state water quality criteria follow a **streamlined** review process.

# 304(a) Criteria Recommendations Without State Water Quality Criteria

- All new or updated 304(a) criteria recommendations **without** state water quality criteria currently use the following considerations for the criteria adoption process. For the first three items, most attention is given to the past ten years of data.
  - Ambient surface water quality data
  - ICIS discharger inventory data
  - Integrated reports
  - Methodology used to develop criteria

# Ambient Surface Water Quality Data Review Considerations

- Does the substance have adequate data for evaluation?
  - If not, consider using Section 106 Supplemental grant funds to collect surface water samples to fill in data gaps.
  - If there are adequate data, determine the scope of the substance's absence/presence in state waters.
    - If all results are non-detects, then there is less of a need to adopt criteria. Re-evaluate it in the next triennial review cycle.
    - For detections, evaluate their spatial and temporal distributions.
      - Are detections observed statewide? Are detections concentrated regionally or limited to a specific hydrologic unit?
      - Does a seasonal characteristic (e.g., low flow conditions) reflect in the number of detections?
      - This can be informative during reviews of ICIS discharger inventories and integrated reports.

# Ambient Surface Water Quality Data Review Considerations (con't)

- Is the substance expected to occur in point, non-point source pollution, or both?
  - Substances have unique uses, which can make them more apparent in different datasets. For example, an industrial solvent may be more likely to occur in point source pollution and a commercially available pesticide may be more likely to occur in non-point source pollution.
  - Louisiana's ambient water quality monitoring network is designed with long-term monitoring sites to detect substances that aggrade in the environment. Thus, they are located in the lower reaches of all major watershed basins.
  - Both point and non-point source pollution can be detected in ambient water quality data.

# Ambient Surface Water Quality Data Review Considerations (con't)

- Using federal criteria as a screening value, how many detections are above the national recommendation?
  - In Louisiana, typically ~1% of water samples in a ten-year dataset have detections for a given substance.
  - If values for a given substance are below a national criteria recommendation, then this indicates existing NPDES toxic controls are working. Re-evaluate it in the next triennial review cycle.
  - If values are above the national criteria recommendation (and especially if the number of detections is increasing compared to counts observed in previous triennial review cycles), then the need for criteria adoption needs to be further investigated. Existing toxic controls may be inadequate.

# ICIS Discharger Inventory Data Review Considerations

- Because NPDES permitting includes the control of substances that do not have 304(a) criteria, ICIS can be a valuable resource for evaluating the adoption of new criteria recommendations.
- Locate and quantify dischargers for a given substance.
  - What is the spatial distribution of a given substance (e.g., statewide or clustered)?
  - Is the number of dischargers for a given substance increasing, decreasing, or remaining steady compared to previous triennial review cycles?
- Characterize permit compliance for a given substance.
  - How frequently do exceedances occur? When exceedances occur, are they marginally or greatly above the national criteria recommendation?
  - Are exceedances widespread or limited to certain areas or facilities?

# Integrated Report Review Considerations

- Does a given substance appear in integrated reports as a cause of impairment?
  - Do sources of impairment (e.g., industrial discharges or agricultural runoff) match with data and unique characteristics of a given substance (e.g., a pesticide associated with agriculture land use)?
  - What is the spatial scope of impairments (e.g., statewide or localized)?
  - Are causes of impairment natural or anthropogenic?
  - Are impairments long-standing or periodic?
    - Periodic impairments can indicate a seasonal or climatic characteristic (e.g., a drought) is the cause of impairment.
- Do ambient water quality data support impairments?
  - As part of the triennial review process, LDEQ has found multiple integrated report impairments without data to support their listings (i.e., legacy listings).

# Methodology Review Considerations

- Does the new or updated criteria recommendation conform to **established methods** for deriving aquatic life and human health criteria?
  - Identify outstanding data assumptions or procedure modifications that deviate from established methodologies.
    - For example, EPA using $EC_{10}$ data in sensitivity distributions when the 1985 Aquatic Life Criteria Guidelines specify the use of $LC_{50}$ or $EC_{50}$ data.
  - Are these deviations viable or do they indicate a data gap that needs to be filled?
    - If it is determined a deviation is not viable, then the need for a modified criteria adoption needs to be further investigated. The evaluation of a better scientifically defensible method can also be considered.

# 304(a) Criteria Recommendations with Existing State Water Quality Criteria

- Whenever EPA offers a 304(a) criteria recommendation that Louisiana already has water quality criteria, the adoption process is streamlined to focus on reviewing **methodology**.
- Beyond the previously enumerated methodology considerations, the existing criteria recommendation is compared to its update.
  - For aquatic life criteria, there will be a focus on revisions to the sensitivity distribution, with attention given to species determined to be appropriate for use in Louisiana.
  - For human health criteria, there will be a focus on studies and methods used to update slope factors and reference doses.

# Example: Adoption Not Recommended

- 2015 Chlorobenzene Human Health Criteria
  - Chlorobenzene is an anthropogenic industrial solvent and chemical precursor.
  - The past ten years of ambient data (n = 5,396) for it were all non-detects.
  - It has no impairments on integrated reports over the past ten years.
  - In ICIS, there are 98 facilities permitted to discharge chlorobenzene; no reported values (n = 2,834) were greater than site-specific permit limits over the past ten years.

  - It can be assumed existing toxic controls are adequate; reevaluate in the next triennial review cycle.

# Example: Adoption Recommended

- 2013 Ammonia Aquatic Life Criteria
  - Ammonia has natural and anthropogenic sources; it occurs in ambient data statewide, with a 45% detection rate.
  - The updated methodology uses pH and temperature to determine toxicity, which provides for improved event- and site-specific criteria calculations.
  - Mock assessments determined it would be a source impairment in four subsegments.
  - In ICIS, there are 823 facilities permitted to discharge ammonia statewide; 13.9% of reported values were greater than site-specific permit limits over the past ten years.

  - It can be assumed existing toxic controls may be inadequate; the adoption of criteria was recommended.

# Adoption Procedure Challenges

- State rulemaking timelines and paperwork.
  - The state rulemaking process has its own set of timelines and documentation requirements. Rulemaking timelines do not match well with the triennial review process. In the past, strictly connecting rulemaking to the triennial review has led to greater than five-year cycles. Discussions with regional EPA staff indicated they prefer a three-year cycle, with independent rulemaking for complex items.
- EPA amenability to state modifications of 304(a) criteria recommendations and scientifically defensible methods.
  - For example, Louisiana does not have coldwater fisheries conditions. In the past, deleting salmonids from sensitivity distributions was common.
  - Recently, it has become difficult to delete coldwater fish and other aquatic organisms determined to be inappropriate for use in Louisiana.

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# Triennial Review Timeline

- **Day 0**: Initiation of the triennial review process. Drafting of the report of findings document is conducted over the next 14 to 16 months.
- **Year 1.5**: The report of findings document should be finalized roughly in the midpoint of triennial review process.
- **Year 2**: If rulemaking is necessary, it should be initiated one-year prior to the end of the triennial review cycle.
- **Year 3**: Certification of rulemaking effort must be finalized and initiation of the next cycle of triennial review process begins.