

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
2024 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT
CALL FOR DATA

Summary: The Alaska Department of Environmental Conservation (DEC) is requesting water quality data to prepare Alaska's 2024 Integrated Water Quality Monitoring and Assessment Report (Integrated Report). The Clean Water Act requires states to identify whether its waters meet or exceed applicable water quality standards. DEC reports this information to the Environmental Protection Agency (EPA) and the public in the Integrated Report every two years.

Deadline: Data will be accepted through February 1, 2023 for inclusion in the 2024 Integrated Report.

Data Submittal

DEC retrieves data for the Integrated Report from the Water Quality Portal and requests data be submitted through the Water Quality Exchange. In addition, please provide supporting information through the online data submission form on the DEC website. The online data submission form collects information allowing DEC to retrieve data from the Water Quality Portal and provides supporting information.

The Water Quality Portal is a premiere source of discrete water quality data. This cooperative service integrates publicly available water quality data from the United States Geological Survey, EPA, and state, federal, Tribal and local agencies. The Water Quality Exchange is the mechanism for data partners to submit water monitoring data to the Water Quality Portal. The Water Quality Portal is the mechanism for anyone, including the public, to retrieve water monitoring data.

Data submission options:

- Preferred numeric data submission is through the Water Quality Exchange Database: <https://www.epa.gov/waterdata/water-quality-data#wqxoverview>. EPA provides considerable supporting information on this website on how to submit data.
- Water Quality Portal Alternative: numeric data can also be accepted in the Water Quality Exchange web template for Physical-Chemical Results, available at: <https://www.epa.gov/waterdata/water-quality-exchange-web-template-files>.
- Other data types: Narrative information and studies, such as published research and peer-reviewed reports, can be submitted directly as attachments to the data submission form.

Online Data Submission Form information requirements:

Part 1. Contact information

- Organization or individual who collected the data
- Contact person and title
- Phone
- Email address

Part 2. Study identification

- Waterbody and/or watershed information
- Purpose of study

Part 3. Water Quality Portal attributes

Water Quality Portal (or Water Quality Exchange) attributes: this information is required to correctly filter results the Water Quality Portal. If Organization ID and Project ID will not adequately filter the correct results from your study, provide additional information such as Site ID, date range, or other relevant data attributes.

- Organization ID
- Project ID
- Study date range
- Additional information if applicable

Part 4. Quality assurance/quality control information

- Quality Assurance Project Plan and study design
- QA/QC data review protocol and summary of data review
- Laboratory analyses (if applicable)
- Final report (if applicable)

Part 5. Additional information

Please provide any additional comments that might assist in DEC's evaluation of your data. For example, possible impairment sources (i.e. agriculture, municipal sewer outfall, etc.) and causes (sediment, habitat alterations, nutrients, etc.). Submit information and all supporting documentation through the DEC website.

Data Assessment

Waterbodies are assigned to one of five possible categories that describe whether a waterbody is impaired (Categories 5 and 4), if there is not enough information to make a determination (Category 3), or considered to be attaining (Categories 1 or 2).

- Assessment level data is considered as the primary evidence for a waterbody determination for impairment or attainment decisions. To qualify as Assessment level data, DEC requires additional supporting information such as a quality assurance plan and metadata to be submitted or available on request. Any data submitted that does not meet minimum Assessment level requirements is considered Screening level information. Screening level data is included as a part of the report but cannot be used for attainment or impairment decisions.
- Assessment level requirements for data are outlined in one of the DEC final listing methodologies. Most pollutants are described in the Alaska Consolidated Assessment and Listing Methodology; additional pollutant specific listing methodologies are completed for turbidity, petroleum hydrocarbons and pathogens (bacteria). The minimum data requirements for the listing methodologies are summarized in Appendices 1.

Next Steps

Following the call for data period, DEC will begin reviewing and analyzing data for use in the 2024 Integrated Report. We anticipate the draft 2024 Integrated Report will be available for public review in winter 2023-2024. More information about the Integrated Report is available at the DEC website: <https://dec.alaska.gov/water/water-quality/integrated-report/>

If you have questions, contact Amber Bethe at 907-269-7955 or amber.bethe@alaska.gov.

The State of Alaska, Department of Environmental Conservation complies with Title II of the Americans with Disabilities Act (ADA) of 1990. If you are a person with a disability who may need special accommodation in order to participate in this public process, please contact ADA Coordinator Jason Burnett at 907-269-3056 or TDD Relay Service 1-800-770-8973/TTY or dial 711 prior to the expiration date of this public notice to ensure that any necessary accommodations can be provided.

Appendix

Listing Methodology Data Requirements

Summaries of the general minimum data requirements for assessment as well as parameter specific requirements for DEC’s Consolidated Listing and Assessment Methodology (CALM), Pathogens, Turbidity, and Petroleum Hydrocarbons listing methodologies are provided below. DEC conducts water quality assessments using the most stringent of fresh and marine water criteria as such criteria would be protective of all designated and existing uses. The complete listing methodologies and more detail on IR assessments can be found on the DEC website under Past Reports/Resources: <https://dec.alaska.gov/water/water-quality/integrated-report/>.

General summary of minimum requirements for assessment level data qualification for all listing methodologies

Spatial Coverage	Temporal Coverage	Assessment Period	Data Quality
<ul style="list-style-type: none"> • Representative site(s) within an assessment unit • Sampling during key periods (e.g., critical hydrological regimes) 	Current data (less than five years old)	Two years	<ul style="list-style-type: none"> • QAPP (or alternative plan) • QA/QC results meet data quality objectives • Approved methods used for field and lab • Complete metadata

Consolidated Assessment and Listing Methodology (CALM)

The Consolidated Assessment and Listing Methodology (CALM) employs a two-step process where:

1. DEC considers minimum data qualification requirements to determine if data is Screening or Assessment Level. Screening Level data will not be used for further decision making.
2. If data meets minimum data qualifications to be considered Assessment Level, DEC evaluates data to make an attainment or impairment determination. Attainment means that a waterbody is supporting all designated uses for the pollutant parameters evaluated. Impairment means that a waterbody is persistently exceeding criteria for one or more pollutants and not supporting all designated uses.

All data is evaluated with respect to Alaska’s Water Quality Standards found at 18 Alaska Administrative Code 70.020 and criteria adopted by reference in the 2008 Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances. Data evaluation should yield transparent and reproducible recommendations based on clear numeric thresholds. This guidance aligns with the EPA’s Consolidated Assessment and Listing Methodology recommendations. CALM will not be used for pollutants with specific listing methodologies including Pathogens, petroleum hydrocarbons, and turbidity. Specific requirements for those listing methodologies are described below.

Summary of CALM technical component and minimum sample size requirements

Technical Component	Minimum Sample Size
Monitoring via grab sampling, composite sampling, or continuous monitoring instruments	<ul style="list-style-type: none"> • Ten samples each year • Five samples each year for toxic pollutants for the acute aquatic life use

Pathogens

The pathogens (bacteria) criteria for freshwater and marine water uses are specified in Alaska’s Water Quality Standards 18 AAC 70.020(2) and (14).

A minimum number of bacteria samples must be collected in two of the most recent 5 years for an attainment or impairment determination. Data will be grouped and evaluated by individual water year, which extends from October 1 of one year through September 30 of the following year. Water years do not need to be consecutive for assessment purposes. If fewer samples are collected, data is only considered for screening purposes.

Summary of Pathogens technical component and minimum sample size requirements

Designated Use	Technical component	Duration	Minimum sample size
Freshwater and marine water supply and contact recreation	<ul style="list-style-type: none"> • Freshwater grab sample for fecal coliform or Escherichia coli analysis • Marine water grab sample for fecal coliform or Enterococci 	<ul style="list-style-type: none"> • Geometric mean • Single sample result 	Five samples within a 30-day period each water year (October 1-September 30)

Marine harvest	Marine water grab sample for fecal coliform or Enterococci	<ul style="list-style-type: none"> • Geometric mean • Single sample result 	15 samples in the first water year and five samples in the second water year. Each water year must include samples over a 90-day period each year
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Turbidity

The turbidity criteria for freshwater and marine water uses are specified in Alaska’s Water Quality Standards 18 AAC 70.020(12) and (24). The listing methodology applies primarily to evaluating turbidity in rivers and streams.

Turbidity assessment requires the establishment of natural conditions for comparison with an impacted or downstream site. Sampling approaches to characterize natural conditions include:

- **Upstream/downstream:** Paired data measurements are taken concurrently in the water at upstream (natural conditions) and downstream (impacted from a particular pollutant source) sites. The upstream site to establish the natural conditions should be above any anthropogenic point or nonpoint sources of turbidity and should have similar stream geomorphology. Concurrent comparisons of values (natural conditions and impacted sites) may be difficult especially when grab samples are used. Samples from the natural conditions site and impacted sites may be collected several hours apart, but should occur within a reasonable period of time, e.g. no more than one day of flow time between upstream and downstream sites to be considered concurrent. This is the preferred approach.
- **Paired watershed:** a nearby water with similar hydrology, morphology, topography, and other characteristics to the impacted water is identified for use in establishing the natural conditions. The watershed used to establish the natural conditions should be free of any anthropogenic point or nonpoint sources of turbidity (EPA 1993, Hughes et al. 1986).
- **Historic versus current condition:** Historic data collected pre-impact is compared to more recent data collected post-impact in a waterbody.

Summary of Turbidity technical component and minimum sample size data requirements

Technical component	Duration	Minimum sample size
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Measurement of turbidity in nephelometric turbidity units (NTU) and meet EPA method 180.1 using grab samples or continuous sampling data loggers (preferred)	Daily average of turbidity measurements	Samples must be collected on at least 20 days each year at both the natural conditions and impacted sites
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Petroleum Hydrocarbons

The petroleum hydrocarbons, oils and grease criteria for freshwater and marine water uses are specified in Alaska’s Water Quality Standards 18 AAC 70.020(5) and (17). Sampling must be representative of the waterbody and address the spatial extent and seasonal periods of concern (normally not less than a three-week annual interval). Samples must be analyzed using specific analytical methods described in detail in the listing methodology.

A sampling plan may consider a two-phased approach, with phase one used for screening purposes and phase two for more intensive sampling to confirm impairment or attainment.

Observations must be spaced such that they are not tied to a single, isolated event (such as would occur with a spill), an isolated source (such as a single motorboat), or a single year. Sampling plans should be designed to be temporally and spatially representative of the waterbody and the sampling period and to capture the persistence of the sheen for a significant period of time during each observation.

Summary of Petroleum hydrocarbons technical component and minimum sample size data requirements

Waterbody part	Technical component	Duration	Minimum sample size
Water surface, floor, adjoining shoreline	Visual observations of anthropogenic sheens	Daily observation	Ten observations in the first year and 20 observations in the second year, for a minimum of 30 total observations

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<p>Bottom sediments</p>	<p>Weight of evidence following DEC Sediment Quality Guidelines (2013) for sampling and analysis of PAH</p>	<p>Not established</p>	<p>20 samples</p>
<p>Water column</p>	<p>The authorized sampling and analysis methods for TAH and TAqH are found in 18 AAC 70.020(b) Note 7</p>	<ul style="list-style-type: none"> • Chronic criterion: 4-day average • Acute criterion: 1-hour or 24-hour 	<ul style="list-style-type: none"> • Chronic criterion: Twenty samples over four consecutive 24-hour cycles. Sample schedule must represent diurnal fluctuations. • Acute criterion: one sample