

# The Boeing Company

Please see attached comments for proposed revisions to Water Quality Policy 1-11.



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April 6, 2018  
SS 040618 001

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Department of Ecology  
PO Box 47600  
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Online submittal form: <http://ws.ecology.commentinput.com/?id=ph6ZP>

REF: Boeing Comments on Proposed Revisions to Washington Department of Ecology, February 2018 Draft Water Quality Assessment Policy 1-11, Chapter 1

Dear Ms. Braley:

The Clean Water Act ("CWA") charges States with the responsibility of assessing waters within their jurisdiction and, based upon that assessment, developing and implementing strategies to improve water quality.

In 2013, the United States Environmental Protection Agency ("EPA") announced a new CWA 303(d) program vision that acknowledges that States have flexibility in selecting and using available water quality improvement tools and that there is not a "one size fits all" approach to restoring and protecting water resources. In 2016 through 2017, the Washington Department of Ecology ("Ecology") solicited input through public meetings and workshops on the scope and content of potential revisions to Ecology's Water Quality Assessment Policy 1-11, Chapter 1 ("Policy"). Boeing thanks Ecology for its efforts to solicit input on potential revisions to the Policy. These efforts resulted in significant benefits to the February 2018 Draft Policy.

However, Boeing also notes that the February 2018 Draft Policy includes a number of new provisions that rely on listing methodologies that are not scientifically defensible or otherwise do not comply with RCW 90.48.570 through RCW 90.48.590 and other requirements for Assessment Unit ("AU") impairment listings.

Boeing therefore requests that Ecology revise the Draft Policy based on Boeing's comments, and those of the Northwest Pulp and Paper Association and Association of Washington Business, (which Boeing joins and incorporates by reference), and recirculate a revised draft for further public review.

In addition to the general concern expressed above, Boeing offers the following specific comments on the February 2018 Draft Policy.



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## Comments to Definitions

### Definitions. Page vii - Definition: "Call for Data."

- In order to ensure that data submitted is of acceptable quality, the definition of "Call for Data" should include a reference to time limitation of "most recent ten years of data"

## Comments to Part 1: General Assessment Considerations

### Section 1D. Ensuring Data Credibility in the Assessment

- The proposed changes to the Policy include several new data requirements, as noted in comments on section 2I Toxics-Human Health Criteria below. Ecology has noted that Policy 1-11, Chapter 2 Ensuring Credible Data for Water Quality Management is not part of the current public comment opportunity. However, all of the new data requirements should be incorporated into Chapter 2 at the next update. In addition, data that does not comply with data validation requirements should be considered unusable and not used for the water quality assessment, per "Data Unusable for the Assessment" (page 10).
- Page 7 – Data Evaluation for Use in the Assessment. This section provides a general list that describes data types that will be considered credible. As a general matter, the assessment protocols for some of the pollutants have become overly complicated and data quality intensive. In order to ensure consistent adherence to the requirements for data acceptability, Boeing recommends that Ecology develop a standard checklist that must be completed by the party submitting data at the point when data is uploaded to the Environmental Information Management System ("EIM"). The checklist would support evaluation of whether the data is, in fact, credible as that term is used in RCW 90.48.575. In the absence of a mechanism such as the recommended checklist, there would be insufficient transparency and consistency, likely leading to inclusion of data that is not of acceptable quality and is not credible. Data that is not credible should be considered unusable and not used for assessment purposes, per "Data Unusable for the Assessment" (page 10). In addition, Ecology should provide the ability to upload all QAQC data, such as sampling plans and protocols, quality assurance plans and water quality reports, so that supporting documentation is available to the public.
- Page 9 – Data Verification. The February 2018 Draft Policy does not provide mechanism to ensure adequate transparency of data review and verification. In order to ensure adequate transparency, the Draft Policy should be revised to include a standard data verification report that would be available to the public on the EIM system.
- Page 9 – Data Verification. This section states: "Data validation is not typically necessary for the purpose of the WQA." Although this statement may have been accurate in the past, it is no longer correct, and it is essential that data be verified. As an example, water quality standards for many pollutants are below the detection limit of the approved test methods for the pollutant; in these cases, it is necessary to validate data for any sample data result that



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is between a test method reporting limit and method detection limit and/or marked with a "J" flag. Therefore, the Draft Policy should be revised to include provisions for data verification.

#### 1E. Data and Information Submittals

- Page 12 – The Policy must include a clear method to address data from boundaries between AUs for rivers with definitive boundaries (i.e., culverts or dams). On page 12, the Draft Policy states: “only one parameter value per day per AU will be used in the WQA.” However, segmented rivers/streams may have monitoring locations associated with these definitive boundaries. Such rivers/streams should be assessed as multiple AUs.
- Page 15 – The section titled “Additional Information on Data Submittals” identifies and discusses several factors that limit the type of data that will or will not be used for a WQA. For example:
  - Data no more than 10 years old will be used unless newer data is unavailable
  - Evaluation for compliance with bacteria criteria will be used if the samples were randomly collected
  - Data from projects intended to characterize a localized condition will not be used

In order to ensure that higher quality data is given greater weight than lower quality data, the Policy should explicitly state that randomly collected data representative of the water body as a whole takes precedence over, and supersedes to the extent inconsistent, targeted samples designed to characterize a localized condition.

- Page 15 – By allowing for the continued listing of AUs based on data more than ten (10) years old, the February 2018 Draft Policy fails to meet the intent of the requirement that a listing be based on “an adequate number of samples” (as described under Data Evaluation on Page 7). AUs with no data within the last ten years should be moved to Category 3, Lacks Sufficient Data.
- Page 15, final paragraph, and Pages 58-59. In order to ensure that higher quality data is given greater weight than lower quality data, the Policy should explicitly state that data from time-weighted or volume-weighted water samples takes precedence over grab sample data.

#### 1F. Category Descriptions

- In some cases, data indicate that subdivisions or other discrete areas within an existing AU have demonstratively distinct conditions. In order to ensure that AU listings are based on data that is applicable to the AU, the Policy should provide for splitting the AU into multiple AUs where the data indicate it is appropriate. This concept is illustrated in the following situation discussed on page 20:
  - In the discussion of moving an existing Category 4A listing to a Category 1: If a stream consists of an upstream (or headwaters) section, separated from the

downstream section by a culvert, and the data indicate that these segments have demonstrably distinct conditions, the AU should be divided into two AUs.

#### 1G. Other Assessment Considerations

- Page 25- Section 1G notes that “states are not required to place waterbody segments into impaired categories when it is determined that the exceedance of standards is due solely to non-anthropogenic sources.” In such cases, the waterbody segment can be classified as Category 1. While this language recognizes the potential for non-anthropogenic pollutants, it does not recognize that, in many cases, pollution from widespread sources (and not local to the AU watershed, such as due to atmospheric deposition) can result in impairment of the AU. To avoid listings that are not based on pollution from within the watershed of the AU, the Policy should include provisions that take widespread atmospheric deposition into account when considering the listing of an AU.

Page 25 – Consistent with the prior comment, the Policy should include “atmospheric deposition” to the list of “all available data” from the site in question.

### **Comments to Part 2: Specific Assessment Considerations for Water Quality Criteria**

#### 2A. Bacteria

- Page 33 - “Use of Beach Environmental Assessment, Communication, and Health (BEACH) Program Enterococcus spp. Data”. Ecology has announced rulemaking on the recreational use in WA waters (Chapter 173-201A WAC). The current rulemaking timeline indicates that the proposed rule will be available for public comment in July 2018 and the final rule is expected late 2018. As such, Policy 1-11 will require changes as a result of the rulemaking on recreational use bacteria criteria.

#### 2C. Dissolved Oxygen (pages 40-44) and 2D. pH (pages 45-48)

- Category 5 determinations for Dissolved Oxygen (page 42) and pH (page 47). These sections provide that, in addition to reliance on a hypergeometric test, a Category 5 listing may be based on “observations of large deviations from the criterion.” The sections go on to explain that “observations of large deviations from the criterion” may be based on sampling results from “a single day.” This pathway to a Category 5 listing does not rely on sufficient data and ignores the potential for single and therefore not representative deviations from ambient conditions. To ensure that listings are based on credible data, the provisions for listing based on “observations of large deviations from the criterion” must be modified (e.g., provide that AUs that have a single sample with a large deviation be placed in either category 2 or 3 until more data is obtained that demonstrates persistence) or stricken.

## 2H. Toxics – Aquatic Life Criteria

- Page 58 - Averaging Periods. This section states: “an instantaneous discrete sample will be assumed to represent the averaging periods for the acute criteria and the 24-hour chronic criteria.” In order to ensure that higher quality data is given greater weight than lower quality data, the Policy should provide that 24-hour composite samples take precedence over instantaneous discrete samples.
- Page 60 - In order to ensure that higher quality data is given greater weight than lower quality data, the Policy should provide that more recent data will be used to qualify an AU for a given category and will take precedence over older data.

Page 60 - Category Determinations. This section specifies frequency criteria for determination of Category 5 status that are not necessarily indicative of impairment of ambient water quality (e.g., based on general laboratory error rates, it is possible that two exceedances within a three year period would be the result of laboratory error, such as false positives). To ensure that Category 5 listings are based on credible data, the Policy should include a more robust methodology, such as requiring that a percentage of results exceed the criteria over a specified time period.

## 2I. Toxics – Human Health

- Page 63 – Three approaches for assessing toxics data for human health protection

This section introduces two new terms: tissue exposure concentrations (TEC) and drinking water exposure concentrations (DWEC). The policy needs to include a table listing TEC and DWEC data for each human health water quality criterion.

- Page 63 – Ecology has introduced three new sub-categories under the Toxics – Human Health section. These are:

- 2I(1) Directly assessing human health criteria attainment
- 2I(2) Fish and Shellfish harvest use assessment
- 2I(3) Domestic water supply use assessment

The February 2018 Draft Policy is impermissibly vague as to how these sub-categories inter-relate. As an example, if water column samples indicate the water body meets the criteria as listed in on Table 240 found in WAC 173-201A-240, Toxic Substances, could data on fish and shellfish harvest use assessment over-ride that data (presumably not)? The Policy needs to be revised to explain how these sub-categories inter-related.

- The Policy provides that certain types of information will take precedence over other types of information when considering whether to list an AU. For example, page 64 includes the following statements:

- “A statistically valid study of contaminant levels in fish tissue from a waterbody will take precedence over the harvest use WQA methodology”
- “A statistically valid study of contaminant levels in the water column of a waterbody will take precedence over the domestic water supply use methodology”

However, the discussion is not accompanied by explanatory details. For example, the February 2018 Draft Policy does not include guidelines for performance of a “statistically valid study of contaminant levels in fish tissue.”

Also, the Draft Policy does not explain the inter-relationship among: “[d]irectly assessing human health criteria attainment”; “statistically valid study of contaminant levels in fish tissue”; and “statistically valid study of contaminant levels in the water column.” More explanatory information is necessary if the Policy is to adhere to the requirement that listings be based on credible data.

Another example is found on page 65, which includes the following statements:

- “Attainment of the human health criteria in the water column does not necessarily signify that the harvest use is supported” and
- “Entities would need to work with Ecology to design and implement a study to design and implement a study to directly evaluate the attainment of human health criteria”

The Policy must include additional explanation to support these statements.

- Page 65 –The Policy should not allow an AU to be listing based on a Fish and Shellfish Harvest Use Assessment when there is not data for the AU. At minimum, this section should be revised to require additional evidence in the form of a Species Sensitivity Study followed by chronic toxicity testing (over some period of time) to satisfy the requirements for sub-category 2I(1) and/or 2I(2).
- Page 65 – Additional line of evidence – Department of Health Fish Advisories.

Ecology lists fish advisories as “other lines of evidence” that can be used to make 303(d) determinations. Fish advisories are linked to the new harvest sub-category. Ecology states: “it is anticipated that most waterbodies that have fish advisories will already be listed as Category 5 for tissue.” Given the inherent difficulties with reliance on fish advisories, the Policy must include more specific criteria for when and how fish advisories would be used if they are to be included (e.g., will they be used in AUs that have other, more reliable data, such as fish tissue assessment data?).

- Sections 2I (2) Fish and Shellfish Harvest Use Assessment and on 2I (3) Domestic water supply use assessment. These sections use median values for assessments. However, the draft policy does not include enough information to determine if median is the appropriate approach or whether it should be arithmetic mean. The revised draft policy

must include sufficient explanation and criteria to justify use of one or the other, perhaps on a case by case basis.

#### 2I (1) Directly Assessing Human Health Criteria Attainment

- Page 65 – The February 2018 Draft Policy states: "a statistically rigorous study is the only pathway for directly evaluating whether or not human health criteria are being met." However, the Draft Policy does not include criteria that defines a "statistically rigorous study." In order to ensure that listings are based on credible data, the Policy must provide for public review of proposed studies that might be relied on to evaluate whether human health criteria are being met.

#### 2I (2) Fish and Shellfish Harvest Use Assessment

- Page 65 - 66 – Data Evaluation for Tissue Samples. This section includes an extensive list of sample requirements to support assessment determinations. Chapter 2, Ensuring Data Credibility in the Assessment, should be updated with requirements for limitations on fish and shellfish for toxics-human health assessments. Data that is not credible should be considered unusable and not used for assessment purposes, "Data Unusable for the Assessment" (Page 10).

Further, the Policy needs to include a mechanism for data providers to document compliance with all of the tissue sample requirements listed in this section and for the public to view the data.

- Page 66 – High Site Fidelity. In order to ensure transparency and allow for meaningful comment, Ecology needs to include in a revised Draft Policy a list or table of acceptable species that would be considered to have high site fidelity.

The Draft Policy includes a requirement that tissue samples used for fish harvest use assessment in AUs for listing in Category 5 and Category 1 must be from fish species with high site fidelity. The Draft Policy further explains that fish tissue samples from fish species that travel long distances would not be representative of water quality conditions within the AU grid cell in which it is caught. Boeing supports this approach, as it is consistent with the principle that a Category 5 or Category 1 listing for an AU would not be based on fish tissue samples from fish that do not reflect the water quality within that AU. However, the Draft Policy includes formulas on page 65 for tissue exposure concentrations ("TEC") that are not scientifically robust. Specifically, both formulas for TEC ( $TEC_N$  and  $TEC_C$ ) rely on a "fish consumption rate" that includes anadromous fish and other fish that are not high fidelity species. The effect of this is the formulas include a component that reflects risk that cannot be addressed by the water quality in that AU, which does not meet the requirement of credible data. This aspect of the TEC formulas is not adequately discussed or explained, either from a scientific or policy standpoint, in the Draft Policy. Boeing requests that Ecology provide such explanation in a revised Draft Policy.



- Page 66 – Composite samples and pages 67 – 69 – Category determinations for fish and shellfish harvest use. Please clarify if the terms “composite sample” and “sample” refer to the same definition “composite samples is made of up at least three individual fish.” The following are examples of where the text is unclear:
  - Page 66, Composite samples:
    - “Composite samples are made up of at least three individual fish”
    - “All samples are treated as independent whether or not they are collected in the same day, season or year.
    - Does the term “All samples” refer to a composite sample or a sample of an individual fish?
  - Page 67 and 68, Category 5 determination for both carcinogen and non-carcinogen pollutants. The use of “composite sample” and “sample” is confusing.

The revised Draft Policy also needs to clarify the minimum number of fish or shellfish required to trigger a Category 5 listing.

- Page 66 – Quasi-composite samples. This section allows for a composite sample to be made using fish of different species under certain conditions. The allowance for “quasi-composite samples” is unclear and does not ensure that listings are based on credible data, and should therefore be deleted.
- Page 67 – Data Analysis. The second paragraph on this page states that, if only a single sample value is available for a species, then that sample value will be designated as the median. Reliance on a single sample for a methodology that requires a composite sample is not a reasonable or defensible interpretation of composite sample (and, in practice, could result in a Category 5 listing based on as few as three fish over a ten year period). The provision allowing a single sample to qualify as a composite sample should be deleted.

Page 68 – Category 2 determinations. There is a notation that this applies to all species, including those caught in migration or that have low site fidelity (e.g. salmon and steelhead). In order to ensure transparency, the Policy should include a mechanism to ensure that EIM submittals document the species that the submitted data analysis is based upon.

### 2I (3) Domestic Water Supply Use Assessment

- Page 71 – Category 5 determinations. The blank sample data quality requirements should be included in the next Policy 1-11 Chapter 2 update. In addition, to support transparency, the EIM system should be modified to allow for inclusion of blank sample data and concise notations if samples are culled based upon blank data.



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- Page 71 – Category 5 determinations. The Drinking Water Exposure Concentrations (“DWECC”) for both carcinogen and non-carcinogen pollutants (DWECC and DWECN) include a listing trigger if the parameter has been detected in fish/shellfish tissue during the last 10 years. The reliance on fish tissue data for a determination of drinking water exposure is not justified by any scientifically valid theory; to rely on fish/shellfish tissue sample results to supporting a listing based on drinking water exposure would not meet the requirement of credible data. These provisions need to be deleted.

#### 2I Parameter-specific data requirements and information

Page 73 – 2,3,7,8-TCDD Toxic Equivalency Quotient. The Washington Human Health Water Quality standard regulates only 2,3,7,8-TCDD, and not the other dioxin or furan congeners (see WAC 173-201A, Table 40). In order to ensure clarity with the approved HHWQ standards, Ecology should delete this section.

#### Figures

- Page 85 – Please clarify if the “Bioassay Decision Flowchart” is the “Biological Flowchart” referenced in the Chemistry Decision Flowchart.

#### Appendix 1. Ecology's Standard Operating Procedures

- Given the complexity of the proposed assessment policy for human health toxics, the Policy needs to include a standard operating procedure (SOP) on sampling and test methods with detection limits for fish tissue collection and analysis.

Boeing appreciates Ecology's consideration of these comments. Our point of contact is Lori Blair, at lori.n.blair@boeing.com, (425) 306-4661.

Sincerely,

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cc: Susan Champlain  
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