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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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July 16, 1996

AUG 1996
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EDMC

Mr. Robert K. Stewart
CRCIA Project Manager
U. S. Department of Energy
P.O. Box 550, HO-12
Richland, WA 99352

Dear Mr. Stewart:

Re: Ecology Comments on "Data for the Screening Assessment," DOE/RL-96-16-c, Rev. 0, Volumes I & II, UC-630 Draft

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Enclosed are comments provided by The Washington State Department of Ecology on "Data for the Screening Assessment," DOE/RL-96-16-c, Rev. 0, Volumes I & II, UC-630 Draft. These comments are also being sent separately to you and your contractor staff in electronic format.

Thank you for your willingness to work with the Columbia River Impact Assessment Team in developing and reviewing these documents. If you have any questions regarding these comments, please contact me at 509-736-3027.

Sincerely,

David Holland
Nuclear Waste Program

DH:skr
Enclosure: Ecology Comments on "Data for the Screening Assessment," DOE/RL-96-16-c, Rev. 0, Volumes I & II, UC-630 Draft

cc: Larry Gadbois, EPA
Amoret Bunn, Dames and Moore
Greg deBruler, Columbia River United
Stuart Harris, CTUIR
Paul Danielson / Dan Landeen, Nez Perce Tribe
Ralph Patt; ODOE
Tom Woods/Lino Niccoli; YIN
Administrative Record:
Columbia River Comprehensive Impact Statement

Ecology Comments on Technical Reports for the Columbia River Comprehensive Impact Assessment

Report Title: Miley, TB et al. June 1996. Data for the Screening Assessment, Volume 1: Text. Prepared by PNNL for USDOE.

Contributors: N. Blakely, D. Delistraty, D. Holland, W. Soper, J. Yokel

Page, Paragraph	Comment
page vii, para 2	The term "discrete radioactive particle" may be more appropriate than "cobalt-60 particles" since particles of cesium-137 and europium were also found (Wade, 1994).
page vii, para 2	Initially, define "drive point" and "punch point."
Page xi, Para 3	Explanation is required for not using a media file for biota, Co 60, drive point, N springs, and pore water. A data file is presented on disc at the end of the document Volume II: Appendices.
page xii, para 3	Briefly explain how risk will be aggregated as a result of exposure from multiple chemicals, pathways, and media.
page xiii	Definition for biota should include microorganisms.
Page xi, para 5	The text indicates data was initially gathered for all media from a corridor on both sides of the river. Figure 2.1 seems to indicate, with the exception of external radiation, very little data was available from the north shore corridor along the Hanford Reach section of the river. Was any data screened out after the initial gathering or is this all the data to be found? Please explain the following: Does this screening assessment include the riparian corridor for the north shoreline (no segments are shown)? If it is not included, explain why it is not an area of interest for this assessment and why the corridor was extended to include data from both sides of the river. If this area is included in the screening assessment, how do the segments (shown only for the south portion of the corridor) relate to the northern shore portion of the corridor, which contains little or no sediment, seep, or groundwater data?
page 1.2, Table 1.2	Indicate how statistical trends in the data will be evaluated here or

	refer to Section 3.3.2.3.
page 1.2, Table 1.2	Clarify "filtered" and "unfiltered."
page 1.2, Table 1.2	Include the data decision on non-detects and refer to Section 3.2.
page 1.5, para 2	Provide a citation for an example of applying the Thiessen polygon method (e.g., Clifford, PA et al. 1995. An approach to quantifying spatial components of exposure for ecological risk assessment. Environ. Toxicol. Chem. 14:895-906).
Page 2.2-2.4	The recurring statement " . . . (the resources listed)" needs further explanation. Did the entities listed not collect data or did the authors not collect data available from these entities?
Page 2.4	Section 2.2.11 indicates pertinent information is reported to the Washington State Department of Ecology (Ecology), but section 2.2.12 indicates no data was collected from Ecology. Why? Ecology will provide any data it has for this assessment, if requested. If you need assistance making this request, please contact Jerry Yokel or David Holland at Ecology's Kennewick office.
page 2.6, para 5	Provide more detail on model validation, especially the use of biota data to validate aquatic and terrestrial food web models, used in the ecological screening risk assessment. Describe the biota field data in more detail. Is this data sufficient to perform a validation exercise?
page 2.6, para 5 and Appendix A file co60val.csv	Please add R. E. Jaquish 1995 to the discrete radioactive particle data file.
page 2.6, para 5 and Appendix A file co60val.csv	The raw data provided is incomplete. Either provide ALL raw data or explain how and why data was eliminated. Omitted from Reference 3, of the raw data file, were the particles containing cesium-137 and Europium, as well as 56 other particles collected. See Appendix B, General Comment 2.
Page 2.8, Table 2.1	There is an inconsitency between Table 2.1, which lists no samples in segment 11, and Figure B.11, which shows one sediment sample within the segment 11 boundary. Please correct.
page 3.1, para 3	It seems inappropriate to delay evaluation of data quality. Data quality, including data quality objectives, is a basic data concern and should be described in this report.
page 3.1, para 5	State rationale for assuming log normal distributions for contaminants.
page 3.2, para 1	It is unclear if a "U" is reported under the second bullet. Please clarify.
page 3.2, para 2	Give a citation from the peer-reviewed literature to support eliminating deeper contaminant groundwater data, based on an analogous, or typical situation.
Page 3.2, section 3.2, 4th bullet	If no sample quantitation level is available, the CRDL or CRQL should be used. If flagged with a "U" and above, ARAR's then report one

	half of the CRDL or CRQL. Do not simply omit the non-detects from the risk assessment. (section 5.33, 5.34 RAGS Vol. I, EPA/540/1-89/002)
page 3.3, Table 3.1	Why was well 199-H4-2 eliminated?
page 3.4, para 3	Time series data should be of consistent quality in order to perform trend analyses. Are these data consistent? For example, have analytical methods remained relatively uniform over the data collection period?
page 3.4, para 3	It is stated, the significance level (α) for the Mann-Kendall trend test was chosen to be 0.01. The α level for the Dixon outlier test is 0.05. Please explain why different α levels were selected for these two tests. Furthermore, performing multiple outlier and trend tests may inflate the nominal α level. It seems the Bonferroni inequality should be applied to guarantee the nominal α level.
page 3.4, para 4	Where a data trend exists, are "the most recent [well] data" (from which to select the representative median and maximum data values) obtained from the most recent sampling period? Please clarify.
page 3.5, para 3	Although aggregating data over space and time is useful for the approach selected, information on data variability is masked. This should be explicitly stated.
page 3.5, para 5	If the geometric standard deviation for a contaminant in a river segment is calculated from a set of median values, the true variability is not captured. That is, the input data are median data, not the full range of raw data.
page 3.6, para 2	With "winsorization," are the omitted data less than or equal to zero *or* less than the level of detection (as stated in the glossary under winsorized mean, page xiv)? Please clarify.
Page 3.6, para 5	Typo: "zero of negative" should be replaced with "zero or negative."
page 3.6, para 3	Because data for non-groundwater media (i.e., sediment, seeps, surface water, external radiation) have not been collected in a systematic manner over space and time (at least relative to groundwater data), a discussion on the uncertainty associated with combining disparate data sets for input into the screening risk assessment appears warranted.
page 3.7, para 1	Reference is made to Section 3.3.2.5.2. There is none.
page 4.1, para 2	It is stated, a geometric mean and geometric standard deviation will be calculated on the detection limits reported. However, the second bullet in Section 3.2 (page 3.2) states half the detection limit will be considered the data value. Please clarify.
page 4.1, para 2	It is difficult to see the justification for performing a particular probabilistic analysis with a contaminant distribution generated entirely

	from non-detect data. Please explain.
Appendix A	Explain non CLP qualifier flags, such as UX, BL, LB, and L. N - Springs punch point water data with asterisk qualifier requires explanation.
Appendix B, General comment 1	The number of sample locations listed in the legend, and those actually within the boundary of the segment, do not agree. This is true for most segments. Please correct.
Appendix B, General comment 2	It was my understanding, data eliminated from consideration in this assessment would be flagged and an explanation given as to why it would be inappropriate to use. Has this been done? Is there a list, or file, of data eliminated with the reason given?
Appendix B	There is a large pool of biota data. Will there be an attempt to use this data to validate the model in the eco-risk screen.
References	Wade, 1994. Wade, C. D., and Wendling, M. A. 1994. *100-D Island USRADS Radiological Surveys Preliminary Report - Phase II*. BHI-00134 Rev. 00, Bechtel Hanford, Inc. Richland, Washington. Jaquish, 1995. R. E. Jaquish, *Radiological Survey of 100-D Island*. October 1995 WDOH. Clifford, PA et al. 1995. "*An Approach to Quantifying Spatial Components of Exposure for Ecological Risk Assessment*." Environ. Toxicol. Chem. 14:895-906.