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OFFICE OF
ENVIRONMENTAL
CLEANUP

June 22, 2012

Mr. Bob Wyatt
Chairman, Lower Willamette Group
c/o Northwest Natural
220 Northwest Second Avenue
Portland, Oregon 97209

Re: Portland Harbor Superfund Site, Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240
Directed Modifications and Additional Comments on Baseline Human Health Risk Assessment dated May 2, 2011

Dear Mr. Wyatt;

EPA and its partners have reviewed the revised draft Baseline Human Health Risk Assessment (BHHRA) submitted to EPA on May 2, 2011. In certain respects, the technical computations in the revised BHHRA are correct and the second draft document is an improvement from the previous submittal. The second draft too showed an attempt to address most of EPA's comments and concerns on previous versions. However, the second draft did not fully reflect EPA's directions for changes and there were still significant deficiencies with key elements of the BHHRA.

In accordance with Paragraph 1, Section IX. of the Administrative Order on Consent, EPA determined it was necessary to modify the BHHRA extensively. Attached to this letter are EPA's modifications to the text and required changes to the tables and figures of the BHHRA. The LWG is directed to incorporate EPA's modified text. In addition, EPA has included directed comments in the attachment titled "Modifications to tables and figures" that the LWG must also fully incorporate into the BHHRA before EPA can approve the BHHRA.

Some but not all of the deficiencies with the May draft are listed below:

1. The discussion of the process used to evaluate risks to humans and the conclusions were not clearly presented and, in fact, there were several instances of incorrect or misleading information. For example, the BHHRA repeatedly stated that the exposure assessment assumed someone ate fish every day of the year for 30 years. The LWG is fully aware that such a statement is not accurate. Consumption rates are average lifetime intake doses mathematically averaged to give an average daily rate. EPA commented on this issue in our February 9, 2010 comment letter; however, the LWG failed to address it.

2. There were several instances where the BHHRA does not fully reflect EPA's directions for change, directions given years before and reiterated in our comments to previous versions. For example, EPA's February 2010 comment on Section 3.4, page 31 was:

> In this section and subsequently throughout the risk assessment, replace the term "95% UCL/max EPC" with "RME EPC." The repeated references to a "mean" EPC relative to one based on a 95 percent UCL or maximum concentration is misleading. The text in the second paragraph incorrectly states that exposure point concentrations would be calculated differently for central tendency (CTE) and reasonable maximum (RME) exposures. Consistent with EPA guidance (1992, 2000), the EPC should represent an estimate of the arithmetic average concentration for a contaminant based on a set of site sampling data. Because of the uncertainty associated with estimating the true average concentration at a site, the 95 percent UCL of the arithmetic mean should be used for this variable. The 95 percent UCL provides reasonable confidence that the true site average will not be underestimated. The average concentration, defined as the 95 percent UCL, should be used for both CTE and RME evaluations. The RME evaluation should be distinguished from CTE by accounting for variability in such variables as exposure frequency and intake rates.

However, the LWG did not make the change, claiming that the EPCs were described in a factual manner. Use of the term 95% UCL/Max Scenario is incorrect and needs to be changed throughout the document. RME and CT are not defined based solely on calculation of EPC. Actually, EPC should be the same for both the RME and CT. Since the LWG used different EPCs for the RME and CT calculations, EPA is requiring the removal of the CT evaluations for the consumption scenarios in the BHHRA. Further, reference to RME and CT in the BHHRA were not consistent with those agreed to in the Programmatic Work Plan. EPA has modified the BHHRA to reflect those agreements and adequately describe the RME and CT.

3. There were many instances in the BHHRA where the only explanation the LWG provides for why something is done was that EPA directed or otherwise required it be done. While it may be true EPA directed changes, the LWG is fully aware of the technical basis for the direction and should have included such technical basis in the report. The LWG's failure to fully explain the basis for how the risk assessment was done is not consistent with EPA guidance nor is the report complete and transparent without it. Therefore, EPA had to modify the report to provide the rational for the directions in the text of the BHHRA for clarity and relevance for the assessment.

4. Overall, the BHHRA did not present the process and information in a clear and transparent manner that would allow anyone outside those intimately involved in the development of this assessment to follow and understand. Thus, EPA had to extensively modify the report to make the report understandable to the general public.

In accordance with Paragraph 1, Section XIX. of the AOC, written notice is being given that EPA has determined that the LWG failed to produce a BHHRA of acceptable quality, or otherwise failed to perform in accordance with the requirements of the Order by failing to fully correct all deficiencies and incorporate and integrate all information and comments supplied by EPA on prior versions of the BHHRA.

EPA project managers are willing to coordinate and discuss questions the LWG has with the required changes to the BHHRA, as appropriate. The LWG must provide a draft final BHHRA incorporating all of EPA's modfications (correcting formatting and other typographical errors) and directed comments no later than 30 days from receipt of this letter.

If you have any questions regarding this letter, please contact Chip Humphrey at (503) 326-2678, or humphrey.chip@epa.gov, Kristine Koch at (206) 553-6705, or koch.kristine@epa.gov. All legal inquiries should be directed to Lori Cora at (206) 553-1115, or cora.lori@epa.gov.

Sincerely,

for Chip Humphrey
Remedial Project Manager

Kristine M Koch
Kristine Koch
Remedial Project Manager

encl. (sent via email)

cc: Mr. Jim Anderson
Oregon Department of Environmental Quality

Mr. Rob Neely
National Oceanic and Atmospheric Administration

Mr. Ted Buerger
U.S. Fish and Wildlife Service

Mr. Brian Cunninghame
Confederated Tribes of the Warm Springs Reservation of Oregon

Ms. Rose Longoria
Confederated Tribes and Bands of the Yakama Nation

Mr. Michael Karnosh
Confederated Tribes of the Grand Ronde Community of Oregon

Mr. Tom Downey
Confederated Tribes of the Siletz Indians

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