DOF DALTON OLMSTED FUGLEVAND

March 22, 2024 *via electronic delivery*

Sarah Van Glubt
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

RE: Response to DEQ Comments dated November 8, 2023 – Johnson Lake Fish Tissue Monitoring Study, Monitoring Report ECSI #2086

Dear Sarah Van Glubt,

Thank you for your comments on the February 1, 2023 *Johnson Lake Fish Tissue Monitory Study – Monitoring Report* (Monitoring Report) prepared by Grette Associates, LLC (Grette) for Dalton Olmsted Fuglevand (DOF) on behalf of Owens Brockway Glass Container, Inc. (Owens-Brockway). The Report was submitted as part of the long-term monitoring of the remedial action implemented by Owens-Brockway as described in the 2012 *Remediation Operations & Maintenance Plan – Sediment Remedial Action* (O&M Plan).

DEQ's comments are presented below. Our responses are provided below each comment in Italics.

GENERAL COMMENTS:

1. The Monitoring Report does not include all information specified in the *Sampling and Analysis Plan* (SAP). For example, the SAP indicates that inspection of areas near outfalls (Section 2.1) and inspection of warning signs (Section 2.2) would be completed during the 2022 fish collection event. Please review the SAP and ensure all necessary items are included in the Monitoring Report.

   Response: Section 1.2.1 has been added discussing the conditions near the outfalls and inspection of the warning signs. In addition, recent inspection reports for twice yearly inspections performed by DOF have been included as Appendix M.

2. Various fish sample IDs are inconsistent throughout the report, including inconsistencies with the composite category (e.g., SF, LF) and number indicating the chronological order of fish collection. Please revise all sections of the report (e.g., Table 3, Table 9, Appendix C, and Appendix F) to ensure consistent sample names are provided and that the ID nomenclature follows the methodology specified in the SAP and Section 2.1.1 of the Monitoring Report.

   Response: The Report has been revised to use consistent naming and to standardize nomenclature consistent with the SAP.

3. In various locations in the report, some results are provided without any definition, discussion, or calculation methods provided. Please define, discuss, and provide equations or methods for calculations for all results (e.g., total PCBs, midpoint PCB TEQ, lipid-normalized results, and the whole-body bass concentration).

   Response: The Report has been revised as requested.

4. Additional analysis is needed to evaluate the 2022 fish tissue results and compare the 2022 data to previous sampling events and evaluate trends over time. Comparisons should generally be kept separate by species and fillet versus whole body results. Additional 2004 data is also available for inclusion in these analyses. The following should be considered
   a. Lipid-normalized data to evaluate trends between species, between locations, and over time, where applicable.
   b. Non-lipid normalized data to evaluate fish consumption risk by comparing results to the ROD standard.

   Response: The Report has been revised as requested.

SPECIFIC COMMENTS:

5. Section 2.1 Fish Sample Collection. Please provide information on the level of sampling effort by zone (1-8) and sampling method.

   Response: Table 1 added depicting collection method by zone and date method was employed. Table 3 added to show effort by zone and method.

6. Section 2.1 Fish Sample Collection, Figure 2. Please clarify in the figure that electro-shocking and hook and line methods occurred throughout the lake.

   Response: Figure revised to note that electro-shocking and hook and line methods occurred throughout the lake.

7. Section 2.1 Fish Sample Collection. This section states that fish were collected to target the categories of fish described in the O&M Plan. Please clarify that while the O&M Plan specified large fish as 125 mm to 300 mm, DEQ's comments on the SAP specified that large fish should be defined as >350 mm in length.

   Response: Text revised to clarify.

8. Section 2.1 Fish Sample Collection. Please clarify that the compositing plan created by DEQ was based on information provided to DEQ, including species that had been misidentified, and that this misidentification was not discovered until later.

   Response: Text revised to clarify.

9. Section 2.1 Fish Sample Collection. This section describes "two composites (fillet and whole-body) were created" from the one largemouth bass collected. Please revise this statement to indicate that that the carcass, rather than whole-body, was sampled and that this approach was chosen so that both fillet and whole-body estimations could be made from this one fish, as it was the only largemouth bass collected.

   Response: Text revised to clarify.

10. Section 2.2 Laboratory Analysis. This section states that "All tissue samples were processed in accordance with the approved compositing plan, the approved SAP, and the Laboratory Standard Operating Procedures." However, various deviations occurred, such as misidentified species resulting in more than one species being included in some composites, less than 5 individual fish included in some composites, and exceedances of fish length similarity criteria within composites. Some of the deviations were approved as part of the DEQ compositing plan in Appendix G. Please describe the deviations that occurred.

    Response: Deviations described in Section 4.2.

11. Section 2.2 Laboratory Analysis. Please clarify whether fish tissue composites were created using equal mass from each individually homogenized sample.

    Response: Text revised to clarify.

12. Section 3.1.1 Fish Collection. This section provides some information about the success of certain fish collection methods. Please expand this section to discuss the success or lack of success for each fish collection method by zone and species. This discussion would be well supported by including the collection methods corresponding to each fish collected (e.g., Table 3). DEQ notes that no representative fish from zones 6 or 8 were collected. Zone 6 was one of the areas of elevated PCBs identified in the ROD. Further, according to the SAP, "the collection of small whole-fish composites (<125 mm) will prioritize perimeter sampling zones 6, 7, and 8 to evaluate small home range species closest to the Owens facility." Please clarify whether all perimeter zones were sampled with similar level of effort.

    Response: Text and Table revised per comments.

13. Section 3.1.1 Fish Collection. This section states that "Common carp was found in all zones where fish were captured," though according to Table 3, carp were only captured in zone 1. Please revise.

    Response: Text revised.

14. Section 3.1.1 Fish Collection, Table 3. Some sample names (e.g., SF-7-01, SF-02-40, LF-1-43, and LF-1-44) and dates in this table do not match other portions of the report. Please revise to ensure consistency.

    Response: Text has been revised. Also see section 4.2.1.

15. Section 3.1.1 Dissolved Oxygen. According to the SAP, water temperature, turbidity, and dissolved oxygen levels were to be collected at each sampling location. Please clarify whether the equipment

malfunction discussed in this section impacted temperature and turbidity readings in addition to dissolved oxygen. Please add the water temperature and turbidity readings to Table 4 or a separate table if needed.

Response: Text and table revised per comment.

16. Section 3.2 Compositing Scheme. Please clarify that the compositing plan created by DEQ was predicated on fish information provided to DEQ, including species that had been misidentified, and that this misidentification was not discovered until later.

    Response: Clarification Added.

17. Section 3.3 Laboratory Results. In the relevant subsections, please include equations or methods for calculations, such as midpoint PCB TEQ and lipid-normalized values. Please note that it is standard for lipid-normalized results to be calculated using the lipid fraction rather than percent (e.g., lipid-normal total PCBs = total PCBs / (percent lipid/100%)). If this was not the method used for calculating lipid-normalized results, please update the calculations and revise all relevant sections and tables.

    Response: Text revised to include formulas and calculation methods.

18. Section 3.3.2 Lipids, Table 6. This table does not include any PCB analysis result information, as the text above indicates. Please add this information so that Table 6 is analogous to Table 8.

    Response: Table 6 revised to include PCB's.

19. Section 3.3 Laboratory Results. This section of the report discusses results separately for game (largemouth bass) versus non-game species. Please clarify how the fish were differentiated into these categories, and consider expanding the game fish definition, as some communities may also eat carp.

    Response: Definitions used are consistent with the SAP. No revision to text needed.

20. Section 3.3.3 Game Bass Results. Please calculate and provide whole-body PCB results for the largemouth bass using the fillet and carcass data. Please include the calculation method as part of this discussion including the masses of the fillet and carcass.

    Response: Data added to Tables 8 & 9.

21. Section 3.3.3 Game Bass Results, Table 8. The percent lipid values displayed in this table are lower than expected for bass. Please describe any differences in lipid analysis between the bass and other fish, or what may account for these results.

    Response: Text added to discuss lipid values.

22. Section 3.3.4 Results Summary, Table 9. Some sample names (e.g., SWF-7-01) and dates (e.g., dates for SWF-7-01, SWF-7-03, and SWF-7-02) in this table do not match other portions of the report.

Please revise to ensure consistency.

Response: Text revised for consistency.

23. Section 4.1 Fish Monitoring Study. Please evaluate the results by considering:
    a. Lipid-normalized data to evaluate trends between species and locations.
    b. Non-lipid-normalized data to evaluate results compared to the ROD standard.
    c. Comparing whole body versus fillet results separately.

    Response: Figures 3, 4 & 5 added comparing results as requested.

24. Section 4.3 Comparisons Between Past and Current Studies. This section indicates that the 2004 Arcadis report only included reported values for total PCBs for fish. However, the 2004 study also included fish analyses for PCB congeners and lipids, with results provided in Appendix B. Additionally, the 2004 study included many of the same species that were collected during 2017 and 2022. Please revisit the 2004 report for additional data and use the 2004, 2017, and 2022 datasets to evaluate trends. This would be well supported by providing tables similar to Table 9 for the 2004 and 2017 data. Fillet versus whole-body results should be kept separate. Please consider:
    a. Lipid-normalized data to evaluate trends between species, between locations, and over time, where applicable.

        Response: Figures 3, 4 & 5 added comparing results as requested.

    b. Non-lipid normalized data to evaluate fish consumption risk by comparing results to the ROD standard.

        Response: Table 13 (fillet) and Table 14 (whole body) present non-lipid normalized PCB congener 126 data from 2004-2022 for comparison to the ROD standard of 0.003 ug/kg.

25. Section 4.3 Comparisons Between Past and Current Studies, Table 10. Due to differences in number and type of species across the fish collection events, overall mean concentrations may not be the best way to evaluate long-term trends. Further, generally lipid-normalized values should be used to evaluate trends over time.
    a. Please specify the number of fillet and whole-body samples as well as the corresponding species for each fish collection event to contextualize the results in Table 10.

        Response: Table revised, Figures 3, 4 & 5 added comparing results as requested.

    b. The second paragraph of this section indicates that total PCB concentrations from 2004 to 2022 generally show a declining trend in Table 10. Please describe how this was determined (e.g., trend line). The number of data points to make this observation are limited (i.e., 3).

        Response: Figures 3, 4 & 5 added comparing results as requested using data available from 2004 to 2022. Due to the limited number of data points (i.e., 3) we recommend reperforming the Fish Tissue study at the next 5 year interval (2027) to obtain an

additional data point for use in evaluating trends. Expanding the study to include fish collection within the slough outside of Johnson Lake could be included to evaluate spatial trends in addition to providing an additional time interval.

26. Section 4.3 Comparisons Between Past and Current Studies, Table 11 and Figure 3.
    a. Please add the sample IDs to this table and indicate the number of fish in each composite.

    Response: Sample ID's added. Summary tables for 2004 and 2017 included as Appendix N and include sample IDs and numbers of fish per composite.

    b. The 2004 fish tissue study also included largescale sucker, three-spine stickleback, carp, and largemouth bass. Please add these results to the table.

    Response: 2004 fish tissue study data for largescale sucker, three-spine stickleback, carp, and largemouth bass added to table.

    c. Please add the results for other species beyond largescale sucker and three-spine stickleback from 2017 and 2022 that also have results in other sampling events for comparison.

    Response: Additional species added for which data is available.

    d. Please update Figure 3 to include the additional data described above.

    Response: Sample IDs were added to Figures 3 and 4.

27. Appendix G Approved Sample Compositing Plan.
    a. Please consider reinserting the spreadsheet columns that were used in creating the compositing plan, including species, adult/juvenile distinction, length, and mass.

    Response: The sample compositing plan originally included as Appendix G was an initial draft sent to the laboratory for review. The final composite plan approved by DEQ is now attached as Appendix G and includes columns for species, adult/juvenile distinction, length, and mass.

    b. Please clarify if the sample IDs in red text signify anything.

    Response: Samples IDs shown in red were fish that were misidentified. The misidentification was corrected after the compositing plan was finalized and the samples were composited by the lab.

    c. Please clarify the meaning of the notes included on the far righthand side that reference a "new SR". For example, what does "SR" mean?

    Response: The notes on the compositing plan attached to the prior draft of this report (February 2023) were inserted by the laboratory, as this was a draft of the compositing plan. The reference to "SR" indicates "Sample Replicate"; however, this notation was on an earlier draft of the compositing plan.

    d. Please include an indication of which fish were initially misidentified.

    Response: The fish sample IDs in red text were initially misidentified.

28. Appendix H Coordinates for Fish Sampling. The SAP specifies that "Each sampling location will be recorded using a dGPS." Please clarify whether GPS locations were recorded for collection methods beyond those currently listed in Appendix H.

    Response: An additional table was created in Appendix H showing the coordinates collected during electroshocker sampling. However, due to the transitory nature of the sampling from a small boat, sampling occurred in locations beyond the coordinates listed.

Please let me know if I can provide any additional information.

Thank you,

Rob Webb
President
Dalton, Olmsted & Fuglevand, Inc.