Response to Comments

USFWS Leavenworth National Fish Hatchery
NPDES Permit Number: WA0001902
November 22, 2017

On December 16, 2016, the U.S. Environmental Protection Agency Region 10 (EPA) issued a public notice for the proposed reissuance of the United States Fish and Wildlife Service (USFWS) Leavenworth National Fish Hatchery draft National Pollutant Discharge Elimination System (NPDES) Permit No. WA0001902 (draft permit). The public comment period closed February 3, 2017. On August 9, 2017, the EPA issued a public notice on the antidegradation evaluation for the draft permit, and Washington Department of Ecology (Ecology) issued a public notice on their preliminary 401 certification of the draft permit. The antidegradation evaluation is part of Washington Department of Ecology's (Ecology) 401 certification process. The EPA's public comment period on the antidegradation evaluation closed September 15, 2017. This Response to Comments document addresses comments the EPA received on the draft NPDES permit and antidegradation evaluation. Ecology is considering comments it received on the preliminary 401 certification separately.

During the public comment period for the draft permit, the EPA received comments from the following:

- USFWS Leavenworth National Fish Hatchery (LNFH)
- Wild Fish Conservancy/Center for Environmental Law and Policy (WFC/CELP)

During the public comment period for the antidegradation evaluation, the EPA received comments from WFC/CELP.

This document presents the comments received and responses to those comments. As a result of comments received, the following revisions and clarifications were made to the permit:

- The EPA has changed references in the permit to annual reports for surface water monitoring to "Surface Water Monitoring Annual Report." This is to distinguish the report from the "Annual Report of Operations." EPA has revised the reference in #2 Schedule of Submissions, Table 5 in Section II.B, and Section II.B.9(b). (Comment 1)
- The EPA has revised the Surface Water Monitoring Annual Report due date from each January 20th to every March 1st in #2 Schedule of Submissions and Section II.B.9(b). (Comment 1)
- The EPA has revised the Quality Assurance Plan (QAP) due date to be developed and implemented from 90 days to 120 days after the effective date of the Final Permit in #3 Schedule of Submissions, Section III.A., and Appendix B. (Comment 2)
- The EPA has revised the Best Management Practices (BMP) Plan due date to be developed and implemented from 90 days to 120 days after the effective date of the Final Permit in #4 Schedule of Submissions, Section III.B.2, Section III.B.3., and Appendix B. (Comment 3)
- The EPA has revised the Annual Report of Operations due date from each January 20th to each March 1st in #13 Schedule of Submissions and Section IV.F. The EPA has added the following in the Schedule of Submissions #4: "The BMP must be reviewed annually. A

certified statement of the review is due each year to the EPA and Ecology on March 1st." In Section III.B.4(b), The EPA has added in Section III.B.4(b): "The Permittee may submit the certification as an attachment to the DMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_BMP_05899, where YYYY_MM_DD is the date that the Permittee submits the report." (Comment 4)

- The EPA has revised the sample type for the net total suspended solids (TSS) instantaneous maximum limit from composite to grab in Table 1, Section I.D.1. (Comment 7)
- The EPA has revised the Turbidity Sampling Frequency column in Table 1, Section I.D.1 to read, "During rearing pond or raceway cleaning." (Comment 10)
- The EPA has revised the titles for Table 1, Section I.D.1 and Table 2, Section I.D.2 so they clearly reference the outfalls to which those effluent limitations and monitoring requirements apply. (Comments 11, 13)
- The EPA has revised the permit to include the following under Section I.D.6: "Any commingled discharges are subject to the most stringent effluent limitations for each individual discharge. If any individual discharge is not authorized, then a commingled discharge is not authorized." (Comment 11)
- The EPA has revised Note 16 in Table 2, Section I.D.2, to the following: "Samples of the discharge during drawdown of raceways or rearing ponds fish release must be collected from the last 25% of the total discharge volume that is drawn down. The partitioning of the discharge volume may be based on visual observation." (Comment 14)
- The EPA has revised Note 20 in Table 2, Section I.D.2 to the following: "If multiple raceways or rearing ponds are being drawn down for fish release at the same time, grab samples from individual discharges may be combined into a flow-proportional composite sample for analysis." (Comment 14)
- The EPA has revised Note 28 in Table 2, Section I.D.2 to the following: "The composite sample must be a combination of at least six (6) representative grab samples collected throughout the day. Equal volumes of 6 or more grab samples must be combined to constitute the total composite sample to be analyzed by a certified laboratory." (Comment 15)
- The EPA has revised Note 31 in Table 3, Section I.D.3 as follows*:* "Effluent samples from pollution abatement ponds that receive water from a rearing pond or raceway cleaning event must be collected from the last 25% of discharge volume of the total discharge volume of the cleaning event. The partitioning of the discharge volume may be based on visual observation." (Comment 16)
- The EPA has revised Table 3, Section I.D.3 in the Turbidity Sample Frequency column to the following: "During pollution abatement pond cleaning events throughout the year." (Comment 17)
- The EPA has revised Note #5 of Table 5, Section II.B.7 as follows: "Cleaning events include those of the sand settling basin, the conveyance channel, behind the fish screens after the sand settling basins, and the pollution abatement ponds." (Comment 29)
- The EPA has revised the Task Completion Date for the Phosphorus Source Investigation in Task #1, Table 4, Section I.E from one year to 18 months after the effective date of the Permit. EPA has revised the deliverable as follows: "The Permittee must submit the findings and recommendations to EPA and Ecology for further actions to reduce total phosphorus concentrations in the Hatchery effluent, by June 1, 2019, 18 months after the

effective date of the Permit. The Permittee may submit the findings and recommendations as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_PhosInvest_90408, where YYYY_MM_DD is the date that the Permittee submits the findings and recommendations." (Comment 41)

- The EPA has revised the Task Completion Date for the Overall Planning Phase/Feasibility Study/Alternatives Evaluation in Task #2, Table 4, Section I.E from two years to three years after the effective date of the permit. (Comment 42)
- The EPA has revised the Task Completion Date for the Funding Phase in Task #3, Table 4, Section I.E from five years to six years after the effective date of the permit, The EPA has also revised Deliverable 2 in Task #3, Table 4, Section I.E from 5 years to 6 years. (Comment 44).
- The EPA has added the following in Section I.E of the permit: "Provisions herein should not be interpreted to require obligations or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341." EPA has also added the following footnote in Section I.E.6, Table 4, Task #3, Deliverable 2: "If funding is not able to be obtained, see Section I.E on the Anti-Deficiency Act and Section VI.J on Anticipated Noncompliance." (Comment 44)
- The EPA has revised the Task Completion Date for the Facility Design of Significant Construction Projects in Task #4, Table 4, Section I.E from five years to six years after the effective date of the permit, The EPA has also revised Deliverable 2 in Task #4, Table 4, Section I.E from 5 years to 6 years. These changes were made to align with the new interim deliverable dates for preceding tasks in the compliance schedule. (Comment 46)
- The EPA has revised Table 5, Section II.B.7 in the "Location" column for pH to "Upstream and downstream[2] of Outfall 002." (Comment 46)
- EPA has added the following in Section III.B.5(a)(ii) of the permit, which is the special provision in the Best Management Practices plan to minimize the discharge of solids from the pollution abatement ponds. The Permittee must: "Minimize the discharge of accumulated solids from settling ponds, basins, and production systems. Identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharges of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system. Ensure that in the future the pollution abatement ponds are cleaned on a regular basis, regardless of whether the ponds are physically full or not." (Comment 68)
- The EPA has revised the permit and added Section V.G.4 with the following: "The Permittee must report noncompliance of the maximum daily phosphorus limits by telephone within 24 hours to National Marine Fisheries Service Sustainable Fisheries Division (NMFS SFD) in Portland, Oregon at (503) 230-5412." The EPA has also revised the permit and added Section V.H.2 with the following: "The Permittee must report noncompliance of the average monthly phosphorus limits to the NMFS SFD at the time that monitoring reports for Part V.B are submitted." (Comment 73)

The EPA has also added the following conditions in the NPDES permit to comply with Ecology's final 401 certification. These include:

- The EPA has added the following to the permit under Section I.D.5: "5. Other numeric limitations that apply at each Outfall. The Permittee must comply with WAC 173-201A-

200(1)(c)(ii)(A), which states that “Incremental temperature increases resulting from individual point source activities must not, at any time, exceed 28/(T+7) as measured at the edge of a mixing zone boundary (where “T” represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge).”

- The EPA has added a footnote to the permit under Table 1, Section I.D.1 and Table 2, Section I.D.2 under "Sample Location" for temperature. The footnote for "influent" states: "The influent must be taken at the point where the water enters the facility, including groundwater wells." The EPA has also added in Section II.A.2 the following: "Influent samples, under the requirements of Tables 1 and 2, must be taken at the point where the water enters the facility, including groundwater wells."
- The EPA has added a footnote to each of the following sections: Table 1, Section I.D.1; Table 2, Section I.D.2, Footnote 12; and Table 5, Section II.B of the permit, which reads, “Continuous monitoring should be at a frequency of 15-minute intervals or less.”
- The EPA has changed the sample frequency in Table 3, Section I.D.3 from “Hourly” to “Continuous.” The EPA has also added a footnote to “Continuous” in the Frequency columns for temperature, which reads, “Continuous monitoring should be at a frequency of 15-minute intervals or less.”
- The EPA has revised the permit and added the following to describe how compliance with the final mass-based phosphorus limitation will be assessed: “Compliance of the phosphorus interim limits will be based on a monthly compliance assessment in each Discharge Monitoring Report” in the following sections: Table 1, Section 1.D.1, Footnotes 13 and 14; Table 2, Section I.D.2, Footnotes 27 and 29; and Table 3, Section I.D.3, Footnotes 40 and 41.
- The EPA has revised the units for total residual chlorine from lbs/day to kg/day in Table 1, Section I.D.2 and Table 3, Section I.D.3.
- The EPA has revised the Sample Type for Total Ammonia from “Grab” to “Composite” in each of the following sections: Table 1, Section I.D.1; Table 2, Section I.D.2; Table 3, Section I.D.3; and Table 5, Section II.B.7.

The EPA has added the following as clarifications or corrections to the permit:

- The EPA has added Ecology as a recipient with EPA for all notifications and reports to the following sections: Schedule of Submissions #8, #9, #10, #11, #13; Table 4, Section I.E, Table 4, Task #1, Deliverable 1; Table 4, Section I.E, Task #3, Deliverables 1 and 2; Table 2, Section I.E, Task #6, Deliverable; Section III.B.3; Section III.B.4(b); Section III.B.5(f)(x); Section III.B.5(g); Section IV.A; Section IV.B; Section IV.C; Section IV.E; Section IV.F. The draft permit included Ecology as a recipient for some, but not all notifications and reports.
- The EPA has added the following to the Schedule of Submissions #4 to make language consistent with Section III.B: “The BMP must be reviewed annually. A certified statement of the review is due each year to the EPA and Ecology on March 1st.”
- The EPA has corrected the Schedule of Submissions Item #6 for Twenty-Four Hour Notice of Noncompliance to read: “The Permittee must report certain occurrences of noncompliance by telephone within 24 hours from the time the Permittee becomes aware of the circumstances. (See V.G.1).”

- The EPA has clarified Note 4 of Table 1, Section I.D.1 to read: "For reporting net values, the Permittee must take both influent and effluent samples on the same day and report the results of analysis of each sample. The collection of the influent monitoring for solids analysis is optional if the Permittee chooses to represent the influent measurement as zero concentration."
- The EPA has moved the footnote on the "Sample Type" column in Table 2, Section I.D.2 and added footnotes to sample types that are "grab" or "composite" under "Sample Type" for settleable solids, TSS, and phosphorus.
- The EPA has revised Table 4, Task #5, Task Completion Date to "Seven years after the effective date of the Permit for Deliverable 1." The EPA has also revised Deliverable 1 as follows: "Permittee must provide a certified progress report to the EPA and Ecology on construction activity, starting on January 1, 2025, and each year thereafter until final construction is completed. The Permittee may submit the report as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_ConstructTask5_90408 where YYYY_MM_DD is the date that the Permittee submits the report."
- The EPA has revised Table 5, Section II.B to include flow monitoring as included in Section II.B.5 for frequency and in Section II.B.1 for monitoring station location. The EPA has added the following row in Table 5: Parameter – Flow; Units of Measurement – gpd; Frequency – Near as practicable to the time that grab and composite samples are collected; Location – Upstream[1] and downstream[2]; Type of Sample – Meter. The EPA has also added Footnote 7 in Table 5, Section II.B: "Appropriate flow measurement devices and methods consistent with accepted aquaculture practice must be selected and used to ensure the accuracy and reliability of measurements of the quantity of monitored flows."
- The EPA has revised the "Location" for turbidity in Table 5, Section II.B.7 from "At the outfall and upstream of the outfall" to "Upstream[1] and downstream[2]." Footnote 1 states "At a location on the creek upstream above the intake for the Hatchery." Footnote 2 states "At a location on the creek downstream, where the Hatchery effluent can be reasonably believed to have achieved complete mixing with the receiving water."
- There are two Sections V.B.2. The EPA has changed the second Section V.B.2 to Section V.B.3.
- "IDEQ" has been changed to "Washington Department of Ecology" in Section V.B.3(a).
- The EPA has changed "EDP" to "effective date of the Permit" in Section I.E, Table 4.
- The EPA has added the following related to electronic submittal of monitoring reports:
    - The EPA has added the following sentence in Section I.E.4: "The Permittee may submit the annual report as an attachment to the DMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Progress_CS010, where YYYY_MM_DD is the date that the Permittee submits the written report."
    - The EPA has added the following sentence in Section I.E, Table 4, Task #1: "The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_PhospInvest_90408, where YYYY_MM_DD is the date that the Permittee submits the written notification."

- The EPA has added the following sentence in Section I.E, Table 4, Task #2, Deliverable 1: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Plan_43699, where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #2, Deliverable 2: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_ConstructTask2_90408, where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #3, Deliverable 1: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_ConstructTask2_90408 where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #3, Deliverable 1: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Fund_90408, where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #4, Deliverable 2: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Plan_90408 where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #4, Deliverable 2: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Design_90408 where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #5, Deliverable 1: “The Permittee may submit the report as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_ConstructTask5_90408 where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #5, Deliverable 2: “The Permittee may submit the written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_ConstructComplete_90408 where YYYY_MM_DD is the date that the Permittee submits the written notification.”
- The EPA has added the following sentence in Section I.E, Table 4, Task #6: “The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Limits_FELAC where YYYY_MM_DD is the date that the Permittee submits the written notification.”

- The EPA has added the following sentence in Section II.A.3(c): "The Permittee may submit the file as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_temperature_43599, where YYYY_MM_DD is the date that the Permittee submits the file.
- The EPA has added the following sentence in Section II.B.9(c) that states: "c) The Permittee may submit the surface water monitoring report as an attachment to the DMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_SWMRP_CS010, where YYYY_MM_DD is the date that the Permittee submits the report."
- The EPA has added the following sentence in Section III.A: "The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_QAP_55099, where YYYY_MM_DD is the date that the Permittee submits the written notification.
- The EPA has added the following sentence in Section III.B.3: "The Permittee may submit written notification as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_BMP_05899 where YYYY_MM_DD is the date that the Permittee submits the written notification.
- The EPA has added the following sentence in Section IV.E: "The Permittee may submit the records to EPA and Ecology as Net DMR attachments. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Feeding_CS010 where YYYY_MM_DD is the date that the Permittee submits the report."
- The EPA has added the following sentence in Section V.B.4, which states: "4. Unless otherwise specified in this permit, the Permittee may submit all reports to EPA and Ecology as NetDMR attachments rather than as hard copies. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_Report Type Name_Identifying Code, where YYYY_MM_DD is the date that the Permittee submits the attachment."

The list of categories of comments include:

- Schedule of Submissions
- Effluent Limits and Monitoring Requirements
- Surface Water Monitoring Requirements
- Stream Flows
- Water Quality Limited Waters/Total Maximum Daily Loads (TMDLs)
- Compliance Schedules
- General Comments
- Fact Sheet
- ESA Consultation
- Response to Request for Public Hearing
- Antidegradation Evaluation

Schedule of Submissions

Comment 1. Due date for Surface Water Monitoring Report (LNFH)

The annual report due date of January 20th does not allow for LNFH to obtain the most recent water quality monitoring results from laboratories and/or contractors, and it also does not allow for the synthesis and analysis of all water quality monitoring during the year. LNFH requests that this due date be changed to March 1st. (Permit, IP Schedule of Submissions #2)

Response. The EPA believes that LNFH's request for additional time to submit the Surface Water Monitoring Report is reasonable. Therefore, the EPA is revising the report due date to be each March 1st.

The Schedule of Submissions #2 refers to requirements for surface water monitoring reporting on pages 22-23 of the permit, Section II.B.9. There appears to be confusion over the difference between this report and the annual report of operations. To provide more clarity, the EPA is revising the permit in the Schedule of Submissions #2 and throughout the permit to refer to the reporting of surface water monitoring as the Surface Water Monitoring Annual Report.

Comment 2. Due date for Quality Assurance Plan (LNFH)

The "90 days after the effective date of the Final Permit" for the Quality Assurance Plan (QAP) is not a sufficient amount of time for the LNFH to go through the federal contracting process, hire a contractor, receive and review a draft QAP, and finalize a QAP. LNFH requests that this due date be changed to 120 days. (Permit, IP Schedule of Submissions #3)

Response. The EPA believes that LNFH's request for additional time to submit the QAP report is reasonable and is revising the permit requirement to allow the Permittee to submit a written notification that the QAP has been developed and implemented 120 days after the effective date of the Final Permit instead of 90 days after the effective date of the Final Permit.

Comment 3. Due date for BMP Plan (LNFH)

The "90 days after the effective date of the Final Permit" for the Best Management Practices (BMPs) is not a sufficient amount of time for the LNFH to go through the federal contracting process, hire a contractor, receive and review draft BMPs, and finalize the BMPs. LNFH requests that this due date be changed to 120 days. (Permit, IP Schedule of Submissions #4, Permit III.B, Fact Sheet, p. 65)

Response. The EPA believes that LNFH's request for additional time is reasonable and is revising the permit due date of the BMP Plan to be 120 days after the effective date of the Final Permit.

Comment 4. Due date for Annual Report of Operations (LNFH)

The annual report due date of January 20th [in III.B.4.b] does not allow for the LNFH to obtain the most recent water quality monitoring results from laboratories and/or contractors and it also does not allow for the synthesis and analysis of all water quality monitoring during the year. LNFH requests that this due date be changed to March 1st. (Permit III.B.4.b)

Response. Section III.B.4.b refers to a certified statement that the annual review of the BMP Plan has been completed. The EPA believes LNFH's request for more time to analyze the

previous year's water quality data to assess BMP effectiveness and certify the annual review of the BMP Plan is reasonable. EPA is revising the permit due date for the annual review of the BMP Plan to be each March 1st. The EPA has also amended the permit so that the BMP annual certification does not need to be part of the Annual Report of Operations and may be submitted as an attachment to the DMR. The EPA has added the following in the Schedule of Submissions #4: "The BMP must be reviewed annually. A certified statement of the review is due each year to the EPA and Ecology on March 1st." In Section III.B.4(b), The EPA has added in Section III.B.4(b): "The Permittee may submit the certification as an attachment to the DMR. The file name of the electronic attachment must be as follows: YYYY_MM_DD_WA0001902_BMP_05899, where YYYY_MM_DD is the date that the Permittee submits the report."

Comment 5. Due date for Annual Report of Operations (LNFH)

See Comment [1] above [re: Schedule of Submissions, #2]. LNFH requests that the due date for the Annual Report of Operations be changed to March 1st. (Permit, IP Schedule of Submissions, #13, p. 5; Permit, IV.F, p.32)

Response. The EPA believes LNFH's request for more time to complete the Annual Report of Operations is reasonable. EPA is revising the permit due date for the annual report to be on March 1st of each year.

Effluent Limits and Monitoring Requirements

Comment 6. Water quality compliance contingencies (LNFH)

Compliance with water quality monitoring is dependent on many factors outside the LNFH's control (i.e., environmental like icing, funding like a federal government shutdown, etc.). Contingencies need to be accounted for in the water quality monitoring compliance. For example, "If contingencies outside the LNFH's control prevent them from complying with the water quality monitoring in this report, the LNFH will contact the U.S. Environmental Protection Agency (EPA) and resume monitoring as soon as possible." (Permit I.D.1, p. 7)

Response. 40 CFR 122.41(a) requires a Permittee to comply with permit conditions and effluent limitations upon the effective date of a permit. This includes influent and effluent monitoring requirements. In the event that unforeseen or uncontrollable issues arise that inhibit the Permittee's ability to comply with all terms and requirements of the Final Permit, the Permittee is required to notify the NPDES Compliance Unit within EPA's Office of Compliance and Enforcement of the event, pursuant to Sections V.G ("Twenty-four Hour Notice of Noncompliance Reporting") and V.H ("Other Noncompliance Reporting") of the permit.

Comment 7. Sample type for Instantaneous Maximum Limit for net TSS. (WFC/CELP)

Regarding the 15.0 mg/L instantaneous maximum limit for net Total Suspended Solids in Table 1, we believe that analyzing a grab sample would provide a more meaningful result than from analyzing a composite sample. (Permit, I.D.1, Table 1, p. 8)

Response. The EPA agrees that a grab sample for the instantaneous maximum limit would be a more accurate sampling method to determine compliance. Ecology's Upland Fin-Fish Hatching

and Rearing General Permit (Ecology, 2015b) requires that if more than one grab sample is collected for net TSS, the highest value should be reported. The EPA has revised the permit requirements in Section I.D.1, Table 1 to require a grab sample for the instantaneous maximum.

Comment 8. Interim and final temperature limits (LNFH)

The interim temperature limits and the final temperature limits do not reflect the best scientific facts available for Icicle Creek, especially the background water quality conditions. Icicle Creek naturally, above all human influence, does not meet either the interim or final temperature limits. Consequently, the water withdrawn (LNFH's receiving water) from Icicle Creek by LNFH does not meet either the interim or final temperature limits. Additionally, neither of these fixed results reflect the "natural conditions" language in the temperature TMDL developed by the Washington Department of Ecology (Ecology). "Temperature shall not exceed 16.0ºC (freshwater) or 13ºC (marine water), no temperature increases will be allowed which will raise the receiving water temperature by greater temperature than 0.3ºC (WAC 173-201A-030(1)(c)(iv)))." Ecology further states that during critical periods, natural conditions may exceed the numeric temperature criteria mandated by the water quality standards. In these cases, the antidegradation provisions of those standards apply. "Whenever the natural conditions of said waters are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria (WAC 173-201A-070(2))." If LNFH's discharges were held to a non-fixed limit of not increasing the temperature of the receiving waters by more than 0.3ºC, the limit would be scientifically and realistically valid and could be met by LNFH. (Permit, I.D.1, pps. 8-9.; I.D.2, Table 2, pps. 10-11; I.D.3 Table 3, pps. 12-13. Fact Sheet, p. 44)

Response. Section 301(b)(1)(C) of the Clean Water Act requires that NPDES permit limits meet water quality standards. In 2007, Ecology developed a Temperature TMDL for the Wenatchee River Watershed (Ecology, 2007), which set a maximum allowable effluent temperature wasteload allocation (WLA) for LNFH of 18ºC. This TMDL was approved by the EPA on August 3, 2007. Subsequently, in January 2011, Ecology revised the water quality standards applicable at the point of the discharge. The revised water quality standard set the temperature criterion at 13°C from August 15 – July 15 and 16°C from July 16-August 14 as described in the fact sheet on pages 20-21. These standards are more stringent than the WLA in the Temperature TMDL for the Wenatchee River Watershed. Pursuant to 40 CFR 122.44(d)(1)(vii), EPA must ensure that the permit meets applicable water quality standards and must ensure that the effluent limits are consistent with the assumptions of a WLA in a TMDL. The WLA provides the maximum daily amount that can be discharged by the facility. In this case, by applying the more stringent water quality standards for Icicle Creek to establish the temperature effluent limits in the permit, the EPA has ensured that the water quality standards in the receiving water and the WLA required for the downstream waterbody are achieved as described in the fact sheet on page 25. Furthermore, the TMDL discussed natural conditions, but the WLAs were based on meeting the numeric criteria in effect at the time, not the natural condition. The permit follows these same guidelines, using the numeric criteria in effect now as temperature limits, not the natural condition. This is another way that the permit is consistent with the assumptions of the WLA and complies with 40 CFR 122.44(d)(1)(vii).

Therefore, the permit includes final temperature limits that comply with the numeric criteria in Washington's water quality standards at WAC 173-201A-030(1)(c)(iv). Specifically, the final limit is 13ºC from August 15-July 15 and 16ºC from July 16-August 14, the State's water quality

standards to protect salmonid spawning and incubation at the mouth of Icicle Creek. In addition, recognizing that the facility will not achieve the final effluent limits upon the effective date of the permit, the EPA has established a compliance schedule for temperature in the permit. Until the final effluent limits go into effect, the interim limit of 17°C year round applies. This interim limit is the 95th percentile of the 7-Day Average Daily Maximum (7DADM) from the last five years of continuous monitoring data.

Comment 9. Phosphorus limits (LNFH)

Similar to the temperature limits above, the fixed total phosphorus limits do not reflect the best scientific facts available for Icicle Creek, especially the background water quality conditions. The water withdrawn (LNFH's receiving water) from Icicle Creek by LNFH does not meet the total phosphorus limits. The LNFH should not be required to remove naturally occurring and point and non-point sources of total phosphorus not attributable to hatchery operations and it is not realistic or technologically feasible for the LNFH to do so. A new, non-fixed total phosphorus limit needs to be developed that reflects the water quality background of the water withdrawn from Icicle Creek by LNFH. As LNFH is a mitigation facility for Grand Coulee Dam, supports a very important and one of the last of its kind tribal fishery, and supports a tribal Coho salmon reintroduction program, a scientifically based increase in total phosphorus, attributable to hatchery operations, above background conditions should be considered. (Permit, I.D.1, p. 9.; I.D.2 Table 2, p. 10; I.D.3, p. 13; Fact Sheet, p. 40, 44)

Response. Section 301(b)(1)(C) of the Clean Water Act requires that NPDES permit limits meet water quality standards. 40 CFR 122.44(d)(1)(vii) requires that NPDES permits achieve state water quality standards and requires the permitting authority to establish effluent limits that are consistent with the assumptions and requirements of a WLA in a TMDL. As explained on page 17 of the Fact Sheet, in 2009, Ecology completed a TMDL for the Wenatchee River watershed, including Icicle Creek, for pH and dissolved oxygen (DO), which was approved by the EPA on August 25, 2009. The Wenatchee River TMDL established a WLA for the hatchery of 0.52 kg/day. To ensure that the effluent limits are consistent with the assumptions of the WLA in the TMDL, the EPA is establishing a final effluent limit of 0.52 kg/day as stated on page 40 of the fact sheet.

Comment 10. Clarification of "cleaning events" for turbidity sampling (LNFH)

Please clarify "cleaning events." Is this a requirement during the general pond cleaning or does this follow under "cleaning events include those of the sand settling basin, the conveyance channel, behind the fish screens, and the pollution abatement ponds (Table 5, note #5)?" (Permit, I.D.1, p. 9)

Response. "Cleaning events" refer to rearing pond or raceway cleaning as in Table 1, Footnote 5. EPA has revised the Turbidity Sampling Frequency column to read, "during rearing pond or raceway cleaning."

Comment 11. Clarification of outfall monitoring requirements (LNFH)

Please clarify which outfall the monitoring requirements are referring to. Outfall 005, 001, and/or 002. (Permit, I.D.2, p. 10)

Response. The effluent limitations and monitoring requirements in Table 1 apply to Outfalls 001, 003, 004, 005 and 006 when those outfalls are in use. The effluent limitations and monitoring requirements in Table 2 apply to Outfalls 001, 003, 004, 005, and 006 during drawdown for fish release when those outfalls are in use. The EPA has revised the titles for both Table 1 and Table 2 so they clearly reference the outfalls to which those effluent limitations and monitoring requirements apply.

In the event that commingling occurs, the EPA has revised the permit to include the following under Section I.D.6: "Any commingled discharges are subject to the most stringent effluent limitations for each individual discharge. If any individual discharge is not authorized, then a commingled discharge is not authorized."

Comment 12. Exceptions for water quality requirements in emergencies (LNFH)

Include in the water quality requirements an exception for an emergency (i.e., complete water loss to the hatchery) fish release. Under the rare event of an emergency fish release, there will not be enough personnel available or time to complete the required water quality monitoring. (Permit, I.D.2, Table 2, p. 10)

Response. See RTC #6.

Comment 13. Flow reporting at Outfall 005 (LNFH)

If this requirement refers to outfall 005, the LNFH may not be able to fulfill this requirement as a variable speed pump is used during fish release to move fish from holding areas to Icicle Creek. (Permit, I.D.2, Table 2 (Flow), p. 10)

Response. Table 2 applies to Outfalls 001, 003, 004, 005, 006 during fish drawdown if those outfalls are in use. LNFH may report how pumps are operated and estimate the amount of volume being discharged. The EPA has revised the title of Table 2 to the following: "Effluent Limitations, including Influent and Effluent Monitoring for Adults Ponds and Raceways during Drawdown for Fish Release for Outfalls 001, 003, 004, 005 and 006."

Comment 14. Clarification of sample collection during raceway drawdown (LNFH)
Clarify in detail what these two statements mean and how the requirements are to be followed. (Permit, I.D.2, Table 2, Notes 15 and 16, p. 10)

Response. The EPA has revised Note 16 in Table 2, Section I.D.2 to the following: "Samples of the discharge during drawdown of raceways or rearing ponds fish release must be collected from the last 25% of the total discharge volume that is drawn down. The partitioning of the discharge volume may be based on visual observation."

The EPA has revised Note 20 in Table 2, Section I.D.2 to the following: "If multiple raceways or rearing ponds are being drawn down for fish release at the same time, grab samples from individual discharges may be combined into a flow-proportional composite sample for analysis."

Comment 15. Clarification on activities during fish release (LNFH)

This statement needs to be clarified. LNFH does not feed fish or clean rearing ponds during fish release. Permit, I.D.2, Table 2, Note #25, p. 11.

Response. The EPA agrees that the note needs to be clarified since fish are not fed during the fish release period. The EPA has revised Note 28 in Table 2 to the following: "The composite sample must be a combination of at least six (6) representative grab samples collected throughout the day. Equal volumes of 6 or more grab samples must be combined to constitute the total composite sample to be analyzed by a certified laboratory."

Comment 16. Clarification on raceway cleaning events (LNFH)

Clarify this statement. Does "raceway cleaning event" represent multiple ponds? (Permit, I.D.3, Table 3, Note #28, p. 12)

Response. Note 28 stated that "Pollution abatement ponds effluent samples must be collected during the last quarter of the volume of a rearing pond or raceway cleaning event." The pollution abatement ponds that receive water from a raceway cleaning event should be monitored

The EPA has revised this note (now Note 31) as follows*:* "Effluent samples from pollution abatement ponds that receive water from a rearing pond or raceway cleaning event must be collected from the last 25% of discharge volume of the total discharge volume of the cleaning event. The partitioning of the discharge volume may be based on visual observation."

Comment 17. Clarification of cleaning events for turbidity sampling (LNFH)

Please clarify "cleaning events". Is this a requirement during general pond cleaning or does this follow under "Cleaning events include those of the sand settling basin, the conveyance channel, behind the fish screens, and the pollution abatement ponds (Table 5, note #5)?" (Permit, I.D.3, Table 3 (Turbidity), p. 13)

Response. LNFH should collect turbidity in effluent during cleaning of the pollution abatement ponds. The EPA has revised Table 3 in the Turbidity Sample Frequency column to the following: "During pollution abatement pond cleaning events throughout the year."

Comment 18. Conversion calculations (WFC/CELP)

The discussion on p. 32 on how the kg/day is derived refers to the wrong units for the 3.79 multiplier. In order to go from mg/L and MGD or kg/day, the correct multiplier would have units of liters/gallon (which is, in fact 3.79). This is very confusing to the reader (the Permit itself does not specify the units on the conversion factor; see p. 12, n. 34). This needs to be made correct and consistent. (Fact Sheet, VI.B, p. 32)

Response. In the comment letter, WFC/CELP refers to Section V.B, page 32 of the Fact Sheet. The correct reference is Section VI.B of the Fact Sheet. The EPA is responding to the comment assuming this refers to Section VI.B, page 32.

As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits. However, in the section on calculating Mass-Based Limits, Mass-based limit (kg/day) = concentration limit (mg/L or µg/L) x flow (mgd) x conversion factor. Where: kg/day = kilograms per day; mgd = millions gallons per day. The conversion factor of 3.79 is to convert from gallons to liters. If the concentration limit is expressed as mg/L, then the conversion factor is 3.79. If the concentration limit is expressed as µg/L, then the conversion factor is 0.00379. The correct conversion factors were used to develop the limits in the permit.

Comment 19. Anti-backsliding in TBELs and WQBELs (WFC/CELP)

The opening paragraph of this section should include a statement regarding that both TBELs and WQBELs are subject to an anti-backsliding review, as it seems as if the final effluent limitations for total suspended solids were based on neither a TBEL nor a WQBEL basis. (Fact Sheet, VI.C, pp. 32)

Response. The EPA disagrees that antibacksliding should be incorporated into Section VI.C of the Fact Sheet, which discusses the development of effluent limitations for the Facility. The antibacksliding discussion is presented in Section V.F of the Fact Sheet (pages 47 – 48). Incorporating it into Section VI.C on the development of the effluent limitations would be redundant. Furthermore, it is stated on page 30 of the Fact Sheet that the effluent limitations for TSS are technology-based effluent limitations. The TBEL was applied using Best Professional Judgement. Please refer to pages 29-32 in the Fact Sheet for the full discussion. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 20. Flow data used to derive WQBELs (WFC/CELP)

We believe EPA should re-analyze the WQBEL calculations using critical design flows derived from a more complete data set (refer to our comments on V.B Receiving Water Low Flow Conditions). (Fact Sheet, VI.C, pp. 32-34)

Response. The final water quality based effluent limitations (WQBELs) were not derived from the receiving water low flow conditions described in Section V.B of the Fact Sheet. The analysis on flow was included for illustrative purposes on flows in Icicle Creek if a mixing zone had been used. However, the State did not authorize a mixing zone for the facility since the receiving waterbody is impaired for DO, pH, and temperature; therefore, the EPA did not incorporate a mixing zone to establish the effluent limitations in the permit. Instead, as discussed in the Fact Sheet on pages 34 and 40, the final limits for phosphorus and temperature were derived from either WLAs in the Wenatchee River TMDL or state water quality standards applied at the end-of-pipe.

The EPA developed interim performance-based limits for phosphorus and temperature using a statistical permit limit derivation approach described in Chapter 5 of the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD). This analysis used effluent flow data collected by USFWS, which is described in Sections II.A and II.B of the Fact Sheet. The EPA determined that the 95th percentile of the data rated as "Good" by the USFWS was the most representative statistical flow to use in these calculations. (Note that the effluent flow data rated as "Good" by USFWS is different than data from Icicle Creek rated as "Good" by USGS at Gaging Station 12458000 upstream of the hatchery discussed in RTC #31).

Comment 21. Impacts of LNFH stream diversion on Icicle Creek temperatures (WFC/CELP)

The subsection entitled *Temperature* discusses USFWS data regarding instream temperatures and the effects of flow additions from Snow and Nada lakes via Snow Creek. We do not dispute the data and therefore the temperature reduction that occurs as a result of the addition, but feel the need to point out that the increase in instream temperature downstream of the LNFH/COIC diversion structure is aggravated by the LNFH's large diversion of water from Icicle Creek, subjecting the remaining flow to increased warming. The discussion and graph on p. 44 seems to

belong better in this section than in the discussion on the compliance schedule. (Fact Sheet, VI.D, pp. 34-42)

Response. We note the comment that LNFH's diversion of water from Icicle Creek may increase warming of the remaining undiverted water.

The temperature discussion on Page 44 of the Fact Sheet, referenced by the commenter, was also included in the Temperature WQBEL Section of the Fact Sheet (pages 34-42). The purpose of the discussion on Page 44 was to summarize the need for a compliance schedule. The EPA included a brief discussion for temperature and phosphorus, the only parameters subject to the compliance schedule. The EPA agrees that Figure 4 (page 44 of the Fact Sheet) would be more appropriately located in Section VI.D; however, the EPA does not generally revise Fact Sheets.

Comment 22. Interim temperature limits (WFC/CELP)

EPA does not give any reason why it chose the 95th percentile of the 7DADMs as the interim limit for temperature. (Fact Sheet, VI.D, pp. 34-42)

Response. The intent of the 95th percentile of the 7-day average daily maximums (DADMs) as the interim limit for temperature is to be high enough to accommodate reasonably anticipated variability within control of the facility. Given the significant month-to-month variability in the temperature observed, the EPA determined the 95th percentile of the 7DADMs appropriately characterizes the existing performance of the facility. In addition, Washington's water quality criteria for temperature are expressed as 7DADMs.

The EPA analyzed the temperature data to develop the limitations that are reasonable on the basis of the design and expected operation of the current control technologies and the facility process conditions. Such limitations are translated into interim effluent limitations in a facility's NPDES permit. LNFH must comply with the interim effluent limitations in the permit until the final temperature effluent limitations go into effect.

Comment 23. Discussion on data for total phosphorus in Fact Sheet (WFC/CELP)

Regarding the subsection entitled *Total Phosphorus*, we believe that the discussion on pp. 45-46 regarding the dataset for total phosphorus should be in this section. (Fact Sheet, VI.D, pp. 40-41)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 24. Using 95th percentile to set interim temperature and phosphorus limits (WFC/CELP)

EPA uses the 95th percentile of the monitoring data from Outfalls 001 and 002 to set interim limits, and goes on to convert the "average monthly limit" to a "maximum daily limit" for each Outfall. The Fact Sheet references the TSD and we are unclear as to why EPA used this document (that supports WQBEL development for toxic substances) as a reference to derive what is essentially a technology-based, or performance-based limit.

But we are more concerned about the use of the 95th percentile for both temperature and total phosphorus. EPA does not state why it uses the 95th percentile rather than the 50th, 75th, 90th, or the 99th, for instance. (Fact Sheet, VI.D, pp. 34-55)

Response. See RTC #22 for the EPA's rationale on using the 95th percentile to derive interim limits for temperature. Like temperature, using the 95th percentile to derive performance-based interim limits for phosphorus is to account for variability in facility operations. To derive interim limits for total phosphorus, the EPA used the 95th percentile of phosphorus data, set it equal to the average monthly limit and used TSD procedures to derive the interim maximum daily load from the average monthly load.

Comment 25. Representation of phosphorus data on graphs (WFC/CELP)

The graphs on page 46 are not based on continuous data and the data should be depicted as scatter graphs rather than line graphs that imply continuous data. Also, EPA should have, if it did not, discounted the data points gathered outside the period of time when the WLA would be in effect (March 1-May 31 and July 1-October 31) to account for relevant seasonal differences in influent/effluent quality. (Fact Sheet, VI.D, pp. 34-55)

Response. The commenter is correct that the data are not continuous. However, the lines were included to depict general trends across the year. The EPA included all available data, including those outside of when the WLA is in effect, to show overall trends in phosphorus in Icicle Creek.

Comment 26. Interim phosphorus limits are too high (WFC/CELP)

We note that the sum of the mass-based interim maximum daily limits from Outfalls 001 and 002 is nearly seven times (1.6 kg/day+1.9 kg/day) the mass-based final maximum daily limit for the facility (0.52 kg/day). We believe that this is too high and EPA should use a lower percentile (e.g., 50th or 75th) in order to further limit the pollution of Icicle Creek and the Wenatchee River in the long interval until the final effluent limitations are in effect. (Fact Sheet, VI.D, pp. 34-55)

Response. The EPA developed the interim limits based on performance. This approach is consistent with methods used to develop interim limits in other permits throughout Region 10 and Ecology's Water Quality Program Permit Writer's Manual (Ecology, 2015a). See RTC #22 for the rationale in using the 95th percentile for the interim limits.

The interim limits included in the permit will ensure that the facility is making the necessary changes to improve treatment operations and move towards compliance with the final effluent limits as soon as possible.

Furthermore, the interim limits for phosphorus are still very low compared to other facilities and hatcheries that discharge phosphorus. For instance, the interim maximum daily limit at Outfall 001 is 15 µg/L TP with a final limit equivalent to 5.7 µg/L TP. The Cities of Leavenworth, Cashmere, and Peshastin wastewater treatment plants have final limits of 90 µg/L TP. An Ecology study from 1989 showed state hatchery outfall concentrations with a median of 30 µg/L TP with a range of 10-70 µg/L TP (Ecology, 1989). The interim phosphorus limit is on the lower end of this range, and the final limit is below the minimum TP level measured in the study.

Comment 27. Limited phosphorus data set to develop phosphorus limits (WFC/CELP)

We also question why the phosphorus dataset is limited. We understand that EPA considered the data submitted by the LNFH in 2011, but Ecology ordered the LNFH to conduct total phosphorus monitoring in the Section 401 Certification issued in 2010. Seeing as how EPA didn't release a draft permit until in 2016, there should have been a more extensive dataset. (Fact Sheet, VI.D, pp. 40-41)

Response. The EPA used all the available phosphorus data that was provided to the EPA by LNFH. The EPA is not aware of any additional phosphorus data collected for the facility.

Comment 28. High interim phosphorus limits and potential for increased LNFH fish production (WFC/CELP)

EPA makes a reasonable assumption that the monitoring data from 2006-2011 is a reflection of the operational changes the LNFH has made since 2005 as outlined on page 17 of the Fact Sheet. We note that the *U.S. v. Oregon* Management Agreement expires at the end of this year, and the current Agreement states that the reduction in the LNFH's production is considered to be an "interim action" and that the parties intend to bring the production levels back to the 1.625 million SCS production level. This was also affirmed at a recent Icicle Working Group meeting (IWG, 2017). *U.S. v. Oregon* cannot mandate higher production at the cost of water quality standards violations. Until the LNFH makes major changes to its infrastructure to reduce phosphorus loading, more fish produced at this facility means more pollution.

EPA has set abnormally high interim limits for total phosphorus and nearly ten years to comply with the final limit, perhaps giving room for the LNFH to expand production and therefore not only continue, but perhaps worsen the ongoing pollution of Icicle Creek and the Wenatchee River. EPA should set lower interim limits for total phosphorus and place enforceable permit conditions mandating the use of lower phosphorus fish food during the critical times of year. (Fact Sheet, VI.D, pp. 42- 47)

Response. The EPA notes the comment on the possibility of increased fish production at the hatchery. RTC #26 describes how the interim limits for phosphorus are relatively low compared to other hatcheries and other phosphorus dischargers in the Wenatchee Basin. If LNFH were to increase its fish production, it would have to reduce its phosphorus levels correspondingly to be in compliance with the interim and final limits.

The Fact Sheet lays out the rationale for a ten-year compliance schedule on pages 40, 43, and 44-47. With the low final phosphorus limits, the technological challenges to meet those final limits, further assessment of phosphorus loading, funding applications, and subsequent designing and building of hatchery upgrades, a ten-year compliance schedule is appropriate. See RTC #48 and #51-53.

Surface Water Monitoring Requirements

Comment 29. Clarification on outfall for turbidity surface water monitoring (LNFH)

A clarification as to which outfall is being referred to is needed. (Permit II.B., Note #5, p. 22)

Response. The EPA has revised Note #5 of Table 5 as follows: "Cleaning events include those of the sand settling basin, the conveyance channel, behind the fish screens after the sand settling basins, and the pollution abatement ponds."

Comment 30. Clarification on fish screens for turbidity surface water monitoring (LNFH)

A clarification as to which fish screens are being referred to is needed.

Response. See RTC #29.

Stream Flows

Comment 31. Inadequate flow dataset for permit limits (WFC/CELP)

EPA used an inadequate dataset for its receiving water low flow calculations basing it on 168 field measurements labeled "Good." EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD) gives no information of the dataset's required size for a reliable computation of the various flows. However, the US Geological Survey does give advice regarding low flow frequencies. In this case, it is unclear why EPA would choose a dataset with fewer than 200 miscellaneous measurements when the automated gage at the USGS station provides daily gauge data. Even if a number of recent readings have not yet been "approved" by USGS…, we calculate that the USGS station contains over 8000 daily flow records. This dataset should be used instead of the extremely limited dataset employed by EPA in preparing this draft permit, in keeping with accepted hydrological practice. (Fact Sheet, V.B, pp. 22-24)

Response. As discussed in RTC #20, the EPA developed the effluent limitations for temperature, phosphorus, net settleable solids, and net TSS independent of the receiving water flow conditions because the State did not authorize a mixing zone. Therefore, the Facility is required to meet the limits end-of-pipe. The analysis on flow in Section V.B was included for illustrative purposes on flows in Icicle Creek, not to derive effluent limitations.

For upstream flow calculations, the EPA used all flow data from USGS Gaging Station 12458000 from 1926-2016, with discharge accuracy rates determined as "good" by the USGS. USGS defines discharge accuracy rates as "good," if they are believed to be within 10% of the true value (Email from Mastin to Wu, 2017). The EPA chose to use higher rated data, since there were a reasonable number of "good" data points to show flow trends in Icicle Creek and calculate statistically significant flows. Though the EPA could have included flow data with lower ratings, the EPA believes the number of data points rated as "good" was adequate to illustrate flows in Icicle Creek. The EPA also used all data for flows downstream of the hatchery at Ecology Monitoring Station 45B070 to evaluate Icicle Creek flows.

Comment 32. Accounting for flow diversions in permit limits (WFC/CELP)

EPA failed to account for water diversions of Icicle Creek flow that could significantly affect low flow conditions adjacent to the LNFH.

EPA's analysis of flow "augmentation" is sketchy and incomplete. EPA failed to account for water diversions of Icicle Creek flow that could significantly affect low flow conditions adjacent to the LNFH. "Augmentation" is very likely much less significant than thought by EPA. If the LNFH augments the flow of Icicle Creek at all, it is only during certain times of the year. Some low-flow periods occur in autumn and winter when there are no significant diversions from Icicle Creek and no releases from Snow and Nada Lakes.

First, almost all, if not all, groundwater used by the LNFH is essentially "recycled" Icicle Creek water (Montgomery Water Group, 2004; Aspect Consulting, 2016) as most of the LNFH's wells are in the shallow aquifer. Second, Snow Lake and Nada Lake are high-elevation lakes in the Icicle Creek basin and it is not known how Icicle Creek flow would be affected if the lakes were left to their own devices and not manipulated by the LNFH. Without a detailed analysis, there is

little basis for the statement that Icicle Creek flow is augmented by diversions from Snow and Nada Lakes.

Most seriously, even if there was a net augmentation, EPA failed to adjust its calculated low frequency flows at the USGS gage from diversions downstream of the gage but upstream of the LNFH's outfalls. The Icicle/Peshastin Irrigation District (IPID) diverts water downstream of the gage, as does the City of Leavenworth, the LNFH, and Cascade Orchard Irrigation Company (COIC). The COIC and LNFH share a diversion structure. These diversions are upstream of the LNFH's outfalls. The IPID diverts 80 to 100 cfs, and until they stop diversions in late September/early October, Icicle Creek flows can get much lower than even the 1Q10 calculated by EPA.

Attached as an Appendix to these comments is a report prepared by Wild Fish Conservancy and the Icicle Creek Watershed Council and submitted by those groups along with CELP and Ms. Harriett Bullitt to the full Icicle Working Group in 2013 (WFC and CELP are no longer members of the IWG.) It illustrates the complex hydrology of Icicle Creek with its numerous diversions, some seasonal, and various additions of water, all based on low frequency flow statistics calculated using an adequate database. (Fact Sheet, V.B, pp. 22-24)

Response. The comment is noted about the complexity of water flows in Icicle Creek downstream of the USGS gaging station upstream of the LNFH. As a general matter, EPA does not revise Fact Sheets, which accompany draft permits. As discussed in RTC #20 and #31, flows from Icicle Creek were not used to develop permit limits. They were included to illustrate the EPA's understanding of Icicle Creek. As discussed on pages 14-15 in the Fact Sheet, the performance-based interim limitations for temperature and phosphorus are calculated using effluent flows measured at the facility, 95th percentile data, and conversion factors. As discussed on pages 34 and 40 in the Fact Sheet and in RTC #20, the final permit limitations for temperature and phosphorus are based on the water quality standards and 2009 Wenatchee River TMDL for dissolved oxygen and pH.

Comment 33. Water flows, additions, and diversions in Icicle Creek (LNFH)

The statement "Because much of the water in Icicle Creek above the LNFH is diverted into the Hatchery during the critical warm summer months, …" is an incorrect statement. During this time period the LNFH is withdrawing less stream flow than it is supplementing from Snow and Nada Lakes. Providing supplemental flows of up to 50 cfs, to ensure that LNFH can withdraw its full water right from Icicle Creek during this time frame, benefits the Icicle Creek system by reducing water temperatures and increasing flow levels when stream flows are typically reduced due to upstream irrigation diversions. Irrigation diversions can remove 48% and 79% of the mean August and September flows, respectively (Mullan *et al,* 1992). Brennan (1938) reported the summer flows in Icicle Creek in 1937, prior to construction of the LNFH, were as low as 20 cfs and that there was not 100 cfs of stream flow in Icicle Creek below the water diversions during the entire irrigation season. Water right-based diversions in Icicle Creek above the future site of the LNFH were established in 1905 (12.4 cfs for the COIC), 1210 (117 cfs for the IPID), and 1912 (3 cfs for the City of Leavenworth). The LNFH's water use is determined by the life stage and how many fish are on the station. Agricultural water use is determined by the stage of the crop growing season. Consequently, the LNFH's surface water withdrawal needs are the lowest when agricultural needs peak. However, it is important to note that water in Icicle Creek is over-allocated. If water users maximized their surface water rights, the stream flow in Icicle

Creek would be reduced by 55% in August and 95% in September in an average water year even with the supplementation by LNFH. (Fact Sheet, VI.D, p. 35)

Response. The comment is noted on the complexity of diversions in Icicle Creek. However, this does not change the EPA's analysis presented in the Fact Sheet. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 34. Background natural temperatures and interim and final temperature limits (LNFH)

Temperature discussions need to include comparisons with Icicle Creek stream flows above all water withdrawals and in the upper reaches of the creek and with the water quality of the water entering the LNFH's surface water delivery system. Also, the interim temperature limits and the final temperature limits do not reflect the best scientific facts available for Icicle Creek, especially the background water quality conditions. Icicle Creek naturally, above all human influence, does not meet either the interim or final temperature limits. Consequently, the water withdrawn (LNFH's receiving water) from Icicle Creek by LNFH does not meet either the interim or final temperature limits. Additionally, neither of these fixed limits reflect the "natural conditions" language in the temperature TMDL developed by the Washington Department of Ecology (Ecology). "Temperature shall not exceed 16.0^{o}C (freshwater) or 13.0^{o}C (marine water), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3^{O}C (WAC 173-201A-030(1)(c)(iv))." Ecology further states that during critical periods, natural conditions may exceed the numeric temperature criteria mandated by the water quality standards. In these cases, the antidegradation provisions of those standards apply. "Whenever the natural conditions of said waters are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria (WAC 173-201A-070(2))." If LNFH's discharges were held to a non-fixed limit of not increasing the temperature of the receiving waters by more than 0.3^{o}C, the limit would be scientifically and realistically valid and could be met by the LNFH. (Fact Sheet, p. 40)

Response. The EPA notes the comment on temperature discussions above all diversions. See RTC #8 for responses on temperature limits. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Water Quality Limited Waters/TMDLs

Comment 35. TMDL attainment of water quality standards (WFC/CELP)

In the subsection entitled *Dissolved Oxygen, pH, and Total Phosphorus* (p. 25), EPA correctly notes that the EPA-approved TMDL for dissolved oxygen, pH, and total phosphorus envisioned attainment of water quality standards by 2019. (Fact Sheet, V.C, page 28)

Response. The EPA notes the comment on the TMDL attainment date of 2019.

Comment 36. PCBs (WFC/CELP)

In the subsection entitled *Polychlorinated Biphenyls (PCBs)* EPA cites the 2005 USFWS study on PCBs. As we pointed out in our comments on the 2006 draft permit and the 2010 draft permit, that study has serious limitations. We are disappointed that EPA continues to rely on it. The Ecology study (Ecology 2016), despite its limitations in the number of samples, is more credible than the USFWS (2005) study as a reason for including only BMPs to manage PCBs through this permit. (Fact Sheet, V.C, pp. 25-26)

Response. Pages 25-26 of the Fact Sheet describes PCB studies in the Wenatchee River and Icicle Creek conducted by USFWS and Ecology. Based on these studies, EPA included a BMP provision in the permit to limit PCB sources from LNFH. The Fact Sheet also describes several actions LNFH has taken to limit PCBs including replacing interior painted raceways with fiberglass to prevent the potential for PCB-contaminated paints leaching into discharge, adding a second pollution abatement pond, and properly disposing of removed solids. The permit provision in the BMP Plan requires LNFH to implement procedures to eliminate the release of PCBs from any known sources in the facility including paint, caulk, or feed.

Comment 37. Background natural conditions and temperature limits language in Fact Sheet (LNFH)

This section needs to include the following language from the temperature TMDL developed by Ecology and should be considered when re-determining effluent limitations. "Temperature shall not exceed 16.0^{o}C (freshwater) or 13.0^{o}C (marine water), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3^{o}C (WAC 173-201A-030(1)(c)(iv))." Ecology further states that during critical periods, natural conditions may exceed the numeric temperature criteria mandated by the water quality standards. In these cases, the antidegradation provisions of those standards apply. "Whenever the natural conditions of said waters are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria (WAC 173-201A-070(2))." Additionally, it should be noted that Icicle Creek naturally, above all human influence, does not meet the fixed TMDL. Consequently, the water withdrawn (LNFH's receiving water) from Icicle Creek by LNFH does not meet the fixed TMDL when background conditions are not considered. (Fact Sheet, V.A.1.c, p. 20; V.C, p. 25)

Response. See RTC #8 on temperature limits. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 38. Phosphorus limits (LNFH)

Similar to the temperature limits above, the fixed total phosphorus limits do not reflect the best scientific facts available for Icicle Creek, especially the background water quality conditions. The water withdrawn (LNFH's receiving water) from Icicle Creek by LNFH does not meet the total phosphorus limits. The LNFH should not be required to remove naturally occurring and point and non-point sources of total phosphorus that is not attributable to hatchery operations and it is not realistic or technologically feasible for the LNFH to do so. A new, non-fixed total phosphorus limit needs to be developed that reflects the water quality background of the water withdrawn from Icicle Creek by LNFH. As LNFH is a mitigation facility for the Grand Coulee Dam, supports a very important and one of the last of its kind tribal fishery, and supports a tribal Coho salmon reintroduction program, a scientifically based increase in total phosphorus, attributable to hatchery operations, above background conditions should be considered. (Fact Sheet, V.C, (D.O., pH, and Total Phosphorus), p. 25)

Response. See RTC #9.

<u>Compliance Schedules</u>

Comment 39. Compliance with permit limits and monitoring when QAP and BMP plans are finalized (LNFH)

It is stated that "effluent limitations and monitoring requirements" must be complied with "immediately upon the effective date of the Permit". This timeline is inconsistent with the 90-day timeline for a QAP and BMPs. Is LNFH being requested to begin water quality monitoring without a QAP or BMPs? Additionally, this "immediate" timeline does not allow for equipment to be purchased, appropriate laboratories to be located, personnel to be trained, etc. It would be more appropriate and scientifically sound if the beginning of the required compliance be equal to the submittal date of a final QAP and BMPs. (Permit, I.E, p. 14)

Response. Pursuant to 40 CFR 122.41(a), Permittees have a duty to comply with all permit conditions upon the effective date of the Final Permit, including monitoring requirements.

Consistent with the Guidance Manual for Developing Best Management Practices (EPA, 1993), it is standard across all permits to allow the QAP and BMP to be submitted after the effective date of the permit when the documents did not exist prior to the issuance of the NPDES permit. Although the permit will allow 120 days for LNFH to complete its QAP and BMPs, it is expected that the Permittee has worked with the EPA during the permit development, seen the draft permit, and is familiar with the effluent limitations to be prepared to meet effluent limitations when the permit is issued. EPA communicated with LNFH on October 10, 2017, and LNFH is in the process of completing a QAP, which they believe will be final around January 1, 2018 (E-mail communication from Cappellini to Wu, 2017b). The BMP plan is not needed to complete monitoring.

Comment 40. Due date for Compliance Schedule Annual Report of Progress (LNFH)

The annual report due date of January 20th does not allow for the LNFH to obtain the most recent water quality monitoring results from laboratories and/or contractors and it also does not allow for the synthesis and analysis of all water quality monitoring during the year. LNFH requests that this due date be changed to March 1st. (Permit, I.E.4, pps. 14-15)

Response. Section I.E.4 on pages 14-15 does not require an annual report due date of January 20th. It requires that an annual report be submitted one year after the effective date of the permit and annually thereafter. No changes have been made to the permit as a result of this comment.

Comment 41. Due date for Phosphorus Source Investigation (LNFH)

This work would have to be contracted out and could not be finalized until after the previous year's results are obtained from laboratories and analyzed. One calendar year after the permit date is not a sufficient amount of time to accomplish this task fully and correctly. (Permit, I.E, Table 4, Task #1, p. 16)

Response. The EPA agrees with the comment and has revised the Task Completion Date for the Phosphorus Source Investigation to 18 months after the effective date of the Permit. The EPA has revised the deliverable as follows: "The Permittee must submit the findings and recommendations to EPA and Ecology for further actions to reduce total phosphorus concentrations in the Hatchery effluent, by June 1, 2019, 18 months after the effective date of the Permit. The Permittee may submit the findings and recommendations as an electronic attachment to NetDMR. The file name of the electronic attachment must be as follows:

YYYY_MM_DD_WA0001902_PhosInvest_90408, where YYYY_MM_DD is the date that the Permittee submits the findings and recommendations."

Comment 42. Due dates for Feasibility Study/Alternatives Evaluation (LNFH)

This timeline does not allow for a sufficient amount to fully or correctly accomplish this task. (Permit, I.E, Table 4, Task #2, pp. 16-17)

Response. The EPA agrees with the comment and has revised the Task Completion Date for the Overall Planning Phase/Feasibility Study/Alternatives Evaluation from two years to three years after the effective date of the permit.

Comment 43. Due date for Feasibility Study (LNFH)

This timeline does not allow for a sufficient amount of time for a "Feasibility" study of this magnitude. (Permit, I.E, Table 4 (Task #2B), p. 17)

Response. See RTC #42.

Comment 44. Funding Phase (LNFH)

This section needs to be reviewed and rewritten. Although the USFWS operates the LNFH, the U.S. Bureau of Reclamation (BOR) is the federal agency responsible for funding the LNFH. Additionally, federal agencies are not guaranteed funding and therefore can't commit to funding. Federal funding is dependent on congressional appropriations. The USFWS LNFH can commit to pursuing the necessary funding to implement facility upgrades as applicable. (Permit, I.E, Table 4, Task #3, p. 17)

Response. The compliance schedule requires interim actions needed to meet the final effluent limitations. Funding, while not guaranteed, is a required element to upgrade as necessary to meet the final effluent limitations. To align with additional time for preceding tasks in the compliance schedule, the EPA has revised the Task Completion Date for the Funding Phase in Task #3, Table 4, Section I.E from five years to six years after the effective date of the permit, The EPA has also revised Deliverable 2 in Task #3, Table 4, Section I.E. from 5 years to 6 years. If LNFH is not able to obtain federal funding, the facility can work with the EPA to determine the best course of action. The EPA has added the following in Section I.E of the permit: "Provisions herein should not be interpreted to require obligations or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341." The EPA has also added the following footnote in Section I.E, Table 4, Task #3, Deliverable 2: "If funding is not able to be obtained, see Section I.E.5 on the Anti-Deficiency Act and Section VI.J on Anticipated Noncompliance."

Comment 45. Certified written notice in funding phase

The LNFH can't commit to certifying that funding is in place within 5 years for the reasons stated above. Additionally, this timeline does not meet the funding cycle for LNFH that is in place. The BOR funds the LNFH through a five-year interagency agreement with the USFWS Leavenworth Fisheries Complex. The current interagency agreement funds standard operations and maintenance activities but there is some limited potential to fund small improvement projects. For large capital improvement projects, the LNFH can request additional funding from the BOR who may have available funding or who may need to, especially for multi-million dollar projects, request project specific congressional funding. All federal funding is dependent

on congressional appropriations and is not guaranteed. The USFWS LNFH can only commit to pursuing the necessary funding to implement facility upgrades as applicable. (Permit, I.E, Table 4, Task #3.2, p. 17)

Response. See RTC #44.

Comment 46. NEPA considerations for facility upgrades (LNFH)

This section will need to be reviewed and rewritten. This task is dependent on federal funding that is not guaranteed. This task timeline does not take into consideration the LNFH's funding cycle or the time required to complete a National Environmental Policy Act (NEPA) and other necessary permitting processes. Furthermore, the LNFH is requesting that EPA review the proposed, fixed temperature and total phosphorus limitations as they do not reflect the best scientific facts available for Icicle Creek, especially the background water quality conditions. These unjustifiable effluent limitations are the basis for the assumption that LNFH needs facility upgrades to meet unrealistic goals. No aspect of facility upgrades can begin until the need is justifiable based on the best available science and the specific goal to be achieved is determined. (Permit, I.E, Table 4, Task #4)

Response. The compliance schedule requires specific actions that will result in the facility coming into compliance with its final limits as soon as possible. To align with additional time for preceding tasks in the compliance schedule, the EPA has revised the Task Completion Date for Task #4 from five to six years. The EPA has revised the Task Completion Date for the Facility Design of Significant Construction Projects in Task #4, Table 4, Section I.E from five years to six years after the effective date of the permit, The EPA has also revised Deliverable 2 in Task #4, Table 4, Section I.E from 5 years to 6 years.

See RTC #44 for comments on funding. A NEPA review is not required for this permitting action because the Hatchery is not a new source, as defined in 40 CFR 122.29. The EPA recognizes that USFWS may conduct other federal actions at the Hatchery that may trigger NEPA. See page 27 of the Fact Sheet.

The EPA has established final temperature and phosphorus effluent limitations to meet water quality standards. RTC #8 and #9 provide more explanation on the final temperature and phosphorus limits. If more information is available in the future on changed conditions in the Icicle Creek and the TMDL is revised, it is possible to modify the permit in the future.

To assess the impact from LNFH's discharge on pH, EPA has revised the permit to include pH monitoring downstream of the facility. EPA has revised Table 5, Section II.B.7 in the "Location" column for pH to "Upstream and downstream[2] of Outfall 002." Footnote 2 refers to the location downstream where complete mixing with the receiving water is reasonably expected to occur.

Comment 47. Due dates for Compliance Schedule Tasks (LNFH)

See comments for Tasks 1 through 4 above. (Permit, I.E, Table 4, Task #5)

Response. See RTC #41-46.

Comment 48. 10-Year Compliance Schedule and 5-year permit (LNFH)

An explanation of how a compliance timeline of 9 years and 11 months is compatible with a 5 year permit expiration date is needed. If a permit expires in five years so do the requirements of

the permit. The permit can only require what is feasibly achievable within five years or the permit's expiration date needs to be extended. (Permit, I.E, Table 4, Task #6)

Response. The EPA regulations do not preclude the EPA from including compliance schedules that extend beyond the term of the permit. (See schedules of compliance in the federal NPDES regulations at 40 CFR 122.47.) Instead, the regulations require that the EPA ensure that limits are met as soon as possible. The EPA's memo on compliance schedules (EPA, 2007b) recognizes that compliance schedules can be longer than 5 years stating: "… Any compliance schedule that extends past the expiration date of a permit must include the final effluent limit in the permit in order to ensure enforceability of the compliance schedule as required by Clean Water Act section 502(17) and 40 CFR 122.2 (definition of schedule of compliance)."

Further, compliance schedules for new water quality based effluent limitations must be authorized by the state in their 401 certification of the permit. In this case, Washington's water quality standards allow for a period of time longer than five years when more time is needed to come into compliance with the applicable water quality standards (WAC 173-201A-510(4)).

When the compliance schedule is longer than one year, federal regulations require that the schedule set forth interim requirements and the dates for their achievement. As required by the regulation, the EPA has established interim milestones for LNFH in the permit. For a more detailed explanation of the compliance schedule, see the fact sheet at pages 42-47.

Comment 49. Reference to Idaho water quality standards in Fact Sheet (WFC/CELP)

The reference to Idaho's WQS in the opening paragraph appears to be a typo. Please see our comments above regarding the discussion on pp. 45-46 of this section regarding the phosphorus dataset and EPA's derivation of the interim limit. (Fact Sheet, Section VI.E, pp. 42-47)

Response. EPA notes the incorrect reference to Idaho water quality standards in Section VI.E. The Fact Sheet should read: "Schedules of compliance are authorized at 40 CFR 122.47 and by WAC 173-220-140 in Washington regulations." As a general matter, EPA does not revise Fact Sheets, which accompany draft permits.

See RTC #27 for discussion on the phosphorus data set, and RTC #24 for EPA's derivation of the interim phosphorus limit.

Comment 50. Public process for compliance schedule and 401 certification (LNFH)

This paragraph is confusing and needs to be clarified. It seems to be stating that comments submitted to EPA on the Compliance Schedule are irrelevant because the Compliance Schedule is finalized by Ecology in the 401 certification process. Also, it needs to be clarified why the draft NPDES permit documents and the 401 certification documents did not go out for public review together. If both permit processes are so intertwined and dependent on each other, it seems to be a disservice to the public to not combine them into one comment process. It will be difficult for the public to be truly informed of what the combined outcome of both processes will be without them being presented together. (Fact Sheet, Section VI.E, p. 46 bottom and top of p. 47)

Response. EPA as a general matter does not revise Fact Sheets, which accompany draft permits. The Fact Sheet describes the compliance schedule as being a part of Ecology's 401 certification process. This document includes responses to comments received on the compliance schedule.

Other comments received by Ecology on their 401 certification is being considered as part of their 401 certification public process.

See RTC #75 for background on timing between the 401 certification process and the draft permit.

Comment 51. Attainment of final limit at end of compliance schedule (WFC/CELP)

We disagree with the decision to give the LNFH a 9 year, 11-month compliance schedule, Paragraph 5 of the memorandum cited in the Compliance Section of the Manual (USEPA 2007), which states:

"In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the compliance schedule "will lead [] to compliance with an effluent limitation…" "to meet water quality standards" by the end of the compliance schedule as required by sections 301(b)(1)(C) and 502(17) of the CWA. See also 40 C.F.R. 122.2, 122.44(d)(1)(vii)(A)."

This paragraph states that EPA must have evidence that the final limit will in fact be met by the end of the compliance schedule. Because nothing is cited in this section of the Fact Sheet, we must assume that EPA does not have any evidence that the LNFH can in fact meet the final limit by the end of the compliance schedule. (Fact Sheet, pp. 42-47)

Response. See RTC #48. Schedules of compliance are authorized at 40 CFR 122.47 and by WAC 173-220-140 in Washington regulations. As cited in the comment, EPA's Permit Writers' Manual (EPA, 2010) and EPA's 2007 memo (EPA, 2007b) provides guidance for factors to consider when including a compliance schedule.

The Permit Writers' Manual summarizes the following considerations from the 2007 memo:

1) Demonstrate that the Permittee cannot immediately comply with the new effluent limitation on the effective date of the permit.
2) Include an enforceable final effluent limitation and a date for achievement in the permit.
3) Justify and document the appropriateness of the compliance schedule; factors relevant to a determination that a compliance schedule is appropriate include (sic) how much time the discharger had to meet the WQBEL under prior permit(s), whether there is any need for modifications to treatment facilities, operations, or other measures and, if so, how long it would take to implement such modifications.
4) Justify and demonstrate that compliance with the final WQBEL is required as soon as possible; factors relevant to a determination that a compliance schedule is required as soon as possible include the steps needed to modify or install treatment facilities, operations, or other measures and the time those steps would take.
5) Include an enforceable sequence of events leading to compliance with interim milestones for schedules longer than one year.
6) Recognize that a schedule solely to provide time to develop a total maximum daily load (TMDL) or to conduct a use attainability analysis (UAA) is not appropriate.

Pages 42-47 of the Fact Sheet describe how the EPA considered the factors above in considering the compliance schedule. The EPA first evaluated temperature at Outfall 001 from 2011-2015

and phosphorus data from Outfalls 001 and 002 from 2011-2015. Temperature and phosphorus data were higher than the final temperature and phosphorus effluent limitations, which supports a reasonable finding that the LNFH cannot meet final effluent limitations for temperature and phosphorus upon the effective date of the permit. Section I.E on pages 14-18 of the NPDES Permit requires that the Permittee must comply with the final temperature and total phosphorus limitations in Part I.D of the permit as soon as possible. Sections I.E.4 on pages 14-15 of the permit require these actions and are enforceable.

As described in RTC #26, the interim and final effluent limitations for phosphorus are low. The 95th percentile of total phosphorus concentrations currently discharged at Outfalls 001 and 002 are 15 µg/L and 94 µg/L, respectively. The final total phosphorus limits are equivalent to 5.7 µg/L. Therefore, a significant reduction in total phosphorus is needed. In addition, removing additional phosphorus loading from an already relatively low amount of phosphorus currently being discharged by LNFH will take time and studies to better understand the sources of phosphorus in hatchery operations and evaluate alternatives to reduce phosphorus loading (EPA, 2007a).

Similarly, interim and final effluent limitations for temperature are low. The final temperature limits are 13^{o}C from August 15-July 15 and 16^{o}C from July 16-August 14. Current temperatures at Outfalls 001 occasionally exceed 13^{o}C and 16^{o}C, during the relevant times of year. Unlike phosphorus, it can be difficult to reduce temperatures from discharges since they are related to the amount of thermal heating from sunlight the effluent receives. Therefore, time is needed for LNFH to meet its final effluent limits.

The compliance schedule on Table 4, pages 16-18, lays out steps to reach the final effluent limitations for temperature and phosphorus. In the first year, LNFH must conduct a phosphorus source investigation to determine the amount of phosphorus in feed and evaluate other phosphorus sources that may be introduced into the hatchery. By the second year, LNFH must complete a Facility Plan to meet the final temperature and permit limits, which includes a feasibility plan that must consider plant upgrades, offsets, changes to sources of hatchery influent, and any other relevant measures. Within five years, LNFH must obtain funding and complete facility design for upgrades or other measures to meet the final temperature and phosphorus limits. Within nine years, LNFH must complete construction of the upgraded. Within nine years and 11 months, LNFH must meet its final temperature and phosphorus limits.

EPA has followed guidelines for demonstrating the need for a compliance schedule and for including necessary enforceable interim actions in the compliance schedule. The 2009 Wenatchee River dissolved oxygen and pH TMDL set a 10-year compliance timeframe for municipalities in the watershed to meet WLAs. Federal facilities, such as LNFH, cannot obtain federal funding until a legally enforceable permit is in place. Therefore, consistent with the TMDL's assumptions of a 10-year timeframe for facilities to be able to meet phosphorus limits, the permit also provides a 10-year compliance schedule to meet final temperature and phosphorus limits. The tasks in the compliance schedule to investigate the source of phosphorus loading from LNFH and develop feasibility alternatives for reducing phosphorus are necessary to assess technologies such as partial reuse aquaculture systems and recirculating aquaculture systems, among other technologies and practices to meet the final limits.

Comment 52. Good faith efforts to meet phosphorus targets and length of Compliance Schedule (WFC/CELP)

Regarding Paragraph 8 of the memorandum cited in the Compliance Section of the Manual (USEPA 2007), which states:

"Factors relevant to whether a compliance schedule in a specific permit is "appropriate" under 40 C.F.R. 122.47(a) include: how much time the discharger has already had to meet the WQBEL(s) under prior permits; the extent to which the discharger has made good faith efforts to comply with the WQBELs and other requirements in its prior permit(s); whether there is any need for modifications to treatment facilities, operations or measures to meet the WQBELs and if so, how long would it take to implement the modifications to treatment, operations or other measures; or whether the discharger would be expected to use the same treatment facilities, operations or other measures to meet the WQBEL as it would have used to meet the WQBEL in its prior permit.

The LNFH has known about water quality issues from temperature and, especially, phosphorus for some time. Ecology first identified high phosphorus loading from Icicle Creek that was attributable to the LNFH in Ecology's field study to support TMDL development (Ecology, 2006). USFWS acknowledged this in Biological Assessments for hatchery operations prepared in 2006 and 2011 (USFWS 2006; 2011). In 2010, Ecology issued a Section 401 Water Quality Certification that directed compliance with the WLA for total phosphorus within five years, based on the TMDL's target for attaining WQS in the basin by 2018 (Ecology, 2010). The Certification also directed the LNFH to conduct phosphorus and temperature monitoring, and develop plans to reduce phosphorus loading and temperatures. The LNFH did not prepare the required plan to monitor phosphorus.

The LNFH has moved at a very slow pace to address these problems. The LNFH investigated a recirculating system in 2009 (Freshwater Institute, 2009) but even now it has not yet reached a pilot stage (IWG 2017). It seems to be content to continue business as usual, and the extremely high interim limits combined with a very generous compliance schedule allows pollution to continue. (Fact Sheet, pp. 42-47)

Response. The EPA has reviewed the schedule of compliance for new water quality-based effluent limits for phosphorus and temperature authorized by Ecology in its Clean Water Act Section 401 certification and has determined, consistent with 40 CFR 122.47(a)(1), that the schedule requires compliance as soon as possible. See also the discussion in the fact sheet on pages 42-47.

Consistent with 40 CFR 122.47(a)(3), the compliance schedule includes interim requirements and the dates for their achievement. The interim requirements are substantial, including obtaining funding, planning, design, construction and process optimization. The EPA believes each of these interim steps are necessary to ultimately achieve the final water quality-based effluent limits for total phosphorus. The EPA also believes that the time intervals between these interim requirements, and, in turn, the total amount of time allowed to achieve compliance, are reasonable.

LNFH has made some changes to reduce phosphorus discharges since 2002, which show good faith efforts that justify the 10-year compliance schedule. These include reducing fish production, investigating and using low phosphorus fish feed, eliminating possible sources of PCBs, and working in the Icicle Creek Working Group on flows that would reduce downstream impacts from the fish hatchery. See pages 17 and 25-26 of the Fact Sheet and RTC #51.

Comment 53. Length of Compliance Schedule (WFC/CELP)

Regarding Paragraph 9 of the memorandum cited in the Compliance Section of the Manual (USEPA 2007), which states:

"Factors relevant to a conclusion that a particular compliance schedule requires compliance with the WQBEL "as soon as possible," as required by 40 C.F.R. 122.47(a)(1) include: consideration of the steps needed to modify or install treatment facilities, operations or other measures and the time those steps would take. The permitting authority should not simply presume that a compliance schedule be based on the maximum time period allowed by a State's authorizing provision."

This paragraph indicates that compliance schedules should not simply be extended to the maximum allowed by a state's WQS. Washington allowed a maximum of 10 years. This compliance schedule is 9 years, 11 months, and it appears to us that reducing the maximum by only one month is a token attempt to comply with this guidance. EPA is essentially extending to the LNFH the maximum time possible. If EPA has specific information regarding the LNFH's timetable that speaks to the specific need for a 9-year, 11-month compliance schedule, it should discuss it in the Fact Sheet. (Fact Sheet, pp. 42-47)

Response. See RTC #48, #51 and #52. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 54. Compliance Schedule tasks and 2010 401 certification (WFC/CELP)

Table 4 outlines the schedules of compliance for temperature and total phosphorus. We believe that for the most part, the tasks repeat what the LNFH was already ordered to do in Ecology's 2010 Section 401 Certification, or else they refer to events in the future that no one, including EPA can reasonably predict.

In a January 6, 2016 letter to Ecology, the LNFH rescinded, in part because "the FWS has completed all of the scientific analysis" [and] "is continuing to pursue ongoing studies … as requested by DOE in the 2010 CWA 401 certification." If in fact the LNFH has done much or all of what Ecology requested in 2010 regarding temperature, it would seem that EPA's Task No. 2 listed in Table 4 of the permit is redundant. The LNFH should be at or near the implementation phase in order to meet the temperature limits in this draft permit.

Similarly, the specific directives regarding phosphorus are similar or identical to the tasks outlined in EPA's draft 2010 permit or Ecology's 2010 Section 401 certification. The LNFH has long known what it needs to do to reduce its phosphorus loads. (Permit, I.E, pp. 16-18)

Response. The interim deliverables in the compliance schedule of the permit differ from Ecology's 2010 401 Certification. The 10-year compliance schedule requires a phosphorus source investigation, a feasibility alternatives analysis, commitment to funding, facility design and construction. Ecology's 401 2010 certification required monitoring at outfalls, analysis of flow management and augmentation options, and a temperature plan, among other studies. It did not specify tasks to investigate and reduce phosphorus as required in this permit's compliance schedule.

Comment 55. Length of Compliance Schedule (WFC/CELP)

Task No. 4 of Table 4 regarding design is envisioned to take place five years from permit issuance, while its analog in the 2010 draft permit was envisioned to need only three years. Seeing as how the LNFH has known about its excess phosphorus loading since 2006, known of the enforceable TMDL and its WLA since 2009, and was under an Ecology order in 2010 to comply with the WLA by 2015, we believe that another five years to reach a suitable design is too generous. As we said above, the LNFH had received plans for a pilot recirculation system in 2009 that it still has not implemented. This history of this hatchery is clear: it uses time not to take action, but to find other reasons why it should be given yet more time.

Overall, we do not believe that the LNFH has made a good-faith effort to address the temperature and phosphorus issues that it has known about for over a decade. It should not be given another decade to begin to comply with the WQS; neither has EPA shown sufficient reason why this facility should be given such a long compliance schedule. (Permit, I.E, pp. 18)

Response. See RTC #48, #51, #52 and #54.

General Comments

Comment 56. Permit flaws and withdrawing permit (WFC/CELP)

While this permit is an improvement over the 2010 draft, it still has major flaws that will allow pollution of Icicle Creek and the Wenatchee River to continue. Most notably:

- EPA used an insufficient dataset to calculate critical design flows and does not show that it has an adequate understanding of the impact of water diversions on Icicle Creek low flows;
- There is no antidegradation analysis included with the draft permit, nor has a preliminary Section 401 Certification that includes such an analysis been done and included with the draft permit;
- The interim limits for temperature and phosphorus allow for unacceptably high loads, i.e., pollution to the receiving waters;
- The 9-year, 11-month compliance schedule is not warranted given the decade that the LNFH has had to address these problems but has not; and
- The interim limits and long compliance schedule will result in continued "take" of ESA-listed salmonids and EPA should formally consult with the Services to ensure their action will not jeopardize listed species.

We recommend that EPA withdraw this permit, address the above major concerns, and reissue another draft as soon as possible. (Draft permit)

Response. See RTC #20 for discussion on the data set for Icicle Creek used to illustrate flows and in the Fact Sheet on pages 14 and 15 for discussion of the effluent flows used to calculate interim phosphorus and total settleable solids limits. See RTC #75 for discussion on the antidegradation analysis and process for public comment. See RTC #22, #24. and #26 on the process and considerations for establishing interim limits for temperature and phosphorus. See RTC #51-#54 for discussion on the compliance schedule. See RTC #73 on ESA consultation. EPA believes the permit has satisfied the legal requirements for issuance and that having legally enforceable permit requirements will benefit Icicle Creek.

Fact Sheet

Comment 57. Yakama Nation Coho Salmon Reintroduction Project (LNFH)

This paragraph needs to be reworded for accuracy. The LNFH supports the Yakama Nation's Coho Salmon Reintroduction Project by providing hatchery facilities for part of its expanded Coho salmon production program. Approximately 800 to 1000 returning adults captured at other locations in the Wenatchee River Watershed are held at the LNFH and are spawned between mid-October to mid-November. (Fact Sheet, first paragraph, p. 12)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 58. Foster-Lucas rearing units (LNFH)

Three of 22 large Foster-Lucas rearing units are used. (Fact Sheet, II.A, p. 13)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 59. Outfall 003 coverage in permit (LNFH)

The LNFH no longer needs this discharge point (Outfall 003) permitted. Outfall 003 will not be used. (Fact Sheet, II.C, p. 15)

Response. The EPA has spoken with LNFH who has indicated that they would like Outfall 003 to be covered in the permit in case of future use (Email Cappellini to Wu, 2017a). Therefore, authorization to discharge from Outfall 003 remains in the permit.

Comment 60. Language for future outfall 006 (LNFH)

This section should be written (change the tense) to reflect that this is a proposed new outfall which has not been used yet. For example, instead of saying that the Outfall 006 "is used to keep flow," say the Outfall "will be used to" or the "intended use of the Outfall is." (Fact Sheet, II.F, p. 16)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 61. Concentrated Aquatic Animal Production Facility Triggering Permit Requirement (LNFH)

The Fact Sheet adequately demonstrates that the LNFH discharges pollutants into waters of the US through point sources. Such discharges are illegal without a Clean Water Act Section 402 permit. EPA does not need to consider the concentrated aquatic animal production facility regulation (40 CFR 122.24 and Appendix C of 40 CFR Part 122) when determining if this facility requires an NPDES permit. (Fact Sheet, III.A., p. 16)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 62. General concerns on permit limits (WFC/CELP)

We have long asserted, and a US District Court decision has recently affirmed, that the LNFH is discharging pollutants from point sources into waters of the United States without a permit in violation of the Clean Water Act. EPA issued draft NPDES permits in 2006 and 2010, but neither of those permits was finalized. According to EPA, the 2006 permit was not finalized because of two TMDL determinations made by Ecology before Ecology issued a 401 Water Quality Certification in 2010. EPA then decided to issue a new draft (the 2010 draft). This Fact Sheet states (p. 17) that EPA determined in 2011, after the comment period for the 2010 draft permit had closed, that operational changes made at the LNFH would necessitate the LNFH to submit a new application for a NPDES permit. That was received in 2011 and the LNFH submitted additional information in 2012.

EPA has not issued a final permit for this facility for the last thirty-seven years or enforced against it for unauthorized discharges, thus extending extraordinary latitude to this facility. If the permit is finalized as drafted, the facility will continue to pollute Icicle Creek and the Wenatchee River. EPA needs to close the loopholes in this permit. (Fact Sheet, III.C., p. 16)

Response. The comment is noted. The permit and compliance schedule for LNFH include pollutant limits, monitoring and reporting requirements, plans, and progress reports to regulate the pollutants discharged from LNFH.

Comment 63. Updating litigation history (LNFH)

This section should probably be updated to reflect the most recent litigation history. (Fact Sheet, III.C, p. 16)

Response. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 64. USGS Gaging Station and locations for City of Leavenworth and Icicle Peshastin Irrigation District Water Withdrawals (LNFH)

It should be noted and taken into consideration that the USGS gaging station being referred to is also above the water withdrawal location for the City of Leavenworth and for Icicle Peshastin Irrigation District. (Fact Sheet, V.B, 2nd paragraph, p. 23)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 65. Mixing zones (LNFH)

A clarification is needed as to if an “end of pipe” limit can be changed to a “mixing zone allowance” limit through Ecology’s 401 certification process. The positive effects of LNFH on the Icicle Creek environment should be accounted for. (Fact Sheet, V.B, 1st paragraph, p. 24)

Response. The permit does not authorize a mixing zone in its NPDES permit because Icicle Creek is impaired. Based on information from the 2010 TMDL, there is no assimilative capacity in Icicle Creek for more phosphorus loading or increased temperature discharges. See RTC #20.

Comment 66. Natural background conditions (LNFH)

EPA and Ecology need to reassess the TMDLs developed for Icicle Creek as the best available science was not used in their development and natural, background conditions were not considered. (Fact Sheet, V.C, p. 24)

Response. The comment is noted.

Comment 67. Second pollution abatement pond (LNFH)

It should be noted that in 2010 a second pollution abatement pond was completed. The data referred to from 2006 to 2011 most likely is not representative of the effluent characteristics since two abatement ponds are currently used. (Fact Sheet, Section V.E, p. 45)

Response. As confirmed in a July 2017 email from the LNFH, the two pollution abatement ponds are identical in size and treatment and run in parallel. Since the influent from the rearing ponds and raceways to the pollution abatement ponds are the same and the treatment is the same, the phosphorus data from 2006-2011 is representative of phosphorus discharges from the pollution abatement ponds.

Comment 68. Permit condition mandating cleaning of pollution abatement ponds (WFC/CELP)

We believe that there should be a permit condition mandating cleaning of the pollution abatement ponds, either on a temporal or performance-based (e.g., where sediment reach a certain depth) basis. EPA should consider Conservation Recommendation 17 of the Biological Opinion on the Operation and Maintenance of the Leavenworth National Fish Hatchery through 2011 (FWS Service Reference Numbers 13260-2008-F0040 and 13260-2006-P-00102008; February 15, 2008) which states: "After the pond is cleaned of its current material, ensure that in the future the pollution abatement pond is cleaned frequently enough that it adequately protects water quality, regardless of whether it is physically full or not. This effort should not contradict any instructions or requirements that may be included by EPA in the NPDES permit. Guidance how to calculate efficiency of a pollution abatement pond, when to clean it, and other considerations can be found at:" https://www.deq.idaho.gov/media/488801-aquaculture_guidelines.pdf (link updated from that listed in the Biological Opinion). Language such as this should be placed in the LNFH permit. (Fact Sheet, Section VIII.B, pps. 65-68)

Response. The EPA agrees that additional language will provide more clarification on cleaning the pollution abatement ponds. This will supplement the effluent limitations in Table 3, Section I.D.3 of the permit for the pollution abatement ponds' Outfall 002 and the BMP plan provisions that control and minimize solids from the abatement ponds.

The EPA has added the following in Section III.B.5(a)(ii) of the permit, which is the provision in the Best Management Practices plan to minimize the discharge of solids from the pollution abatement ponds. The Permittee must:

"Minimize the discharge of accumulated solids from settling ponds, basins, and production systems. Identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharges of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system. Ensure that in the future the pollution abatement ponds are cleaned on a regular basis, regardless of whether the ponds are physically full or not."

This language is also consistent with the EPA's Washington General Hatchery Permit (EPA, 2016a) and Washington's Upland Fin-Fish Permit (Ecology, 2015b).

Comment 69. Essential Fish Habitat (LNFH)

The determination that "there is no designated EFH in the vicinity of the LNFH discharge" needs to be verified with NOAA Fisheries personnel as it is incorrect and actions need to be taken accordingly. (Fact Sheet, Section IX.B, pp. 73 and 74)

Response. The comment is noted. The EPA has contacted NOAA and clarified that there is no Essential Fish Habitat (EFH) designated for steelhead, but there is EFH for spring Chinook in Icicle Creek at its confluence with the Wenatchee River (Email Kondo to Wu, 2017). NOAA's Biological Opinion (NOAA, 2017) has more information on the EFH in Icicle Creek. As a general matter, EPA does not revise Fact Sheets, which accompany draft permits.

Comment 70. 10-year Compliance Schedule and 5-year permit (LNFH)

An explanation of how a compliance timeline of 9 years and 11 months is compatible with a 5 year permit expiration date is needed. If a permit expires in five years so do the requirements of the permit. The permit can only require what is feasibly achievable within five years or the permit's expiration date needs to be extended. (Fact Sheet, Section IX. D, p. 74)

Response. See RTC #48.

Comment 71. Photo of gravity-fed flow (LNFH)

The first picture shows the gravity fed flow into the LNFH's surface water withdrawal system. No pumping. (Fact Sheet, Appendix A, p. 87)

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

Comment 72. Fish release through Outfall 005 (LNFH)

Fish are not released through Outfall 001. Fish are released through Outfall 005. In an emergency fish release the adult return fish ladder may be used as a release point.

Response. The comment is noted. As a general matter, the EPA does not revise Fact Sheets, which accompany draft permits.

ESA Consultation

Comment 73. Interim limits and "take" (WFC/CELP)

We note that the LNFH-specific Foreword that EPA prepared and submitted to the Services along with the Federal and Tribal Hatchery General NPDES Permit does not mention the 9 year, 11-month, compliance schedule. We do not believe that issuance of this permit, that does not require compliance with water quality standards until nearly 10 years from permit issuance, translates to a "may affect, not likely to adversely affect" the ESA-listed salmonids of Icicle Creek and the Wenatchee River. Given that the water quality criteria that are violated by the facility (dissolved oxygen, pH, and temperature) are in place to protect aquatic life, we believe

that the issuance of this permit will result in "take" of listed species. Such "take" is a violation of Section 9 of the ESA absent an incidental take statement issued by the appropriate Service (NOAA Fisheries or USFWS). We believe that EPA should request formal consultation from the Services to fully comply with its ESA duties. (Fact Sheet, Section IX.A, pps. 70-73)

Response. USFWS concurred with the EPA's not likely to adversely affect determination on November 14, 2016. NOAA issued a biological opinion on September 29, 2017 concluding the NPDES interim limits constituted a "take" but that it did not rise to the level of jeopardy. The biological opinion requires that the EPA require monitoring LNFH's compliance with the permit's phosphorus limits. It also requires that the EPA include a permit provision that requires LNFH to report to NOAA when violations of the average monthly or maximum daily phosphorus limits occur. The EPA has revised the permit and added Section V.G.4 with the following: "The Permittee must report noncompliance of the maximum daily phosphorus limits by telephone within 24 hours to National Marine Fisheries Service Sustainable Fisheries Division (NMFS SFD) in Portland, Oregon at (503) 230-5412." The EPA has also revised the permit and added Section V.H.2 with the following: "The Permittee must report noncompliance of the average monthly phosphorus limits to the NMFS SFD at the time that monitoring reports for Part V.B are submitted."

Response to Request for Public Hearing

Comment 74. Request for public hearing (WFC/CELP)

WFC and CELP hereby request that EPA hold a public hearing on the draft NPDES permit. The issues to be addressed at the hearing relate to the compliance schedule proposed in the draft permit for phosphorus, including whether the facility will meet the limit at the end of the compliance schedule and whether the compliance schedule requires compliance with the WQBEL "as soon as possible." (Draft Permit)

Response. Under 40 CFR 124.12, the EPA "shall hold a public hearing whenever [the EPA] finds, on the basis of requests, a significant degree of public interest in the draft permit." WFC/CELP was the only commenter who requested a public hearing. The reason cited for requesting a public hearing concerned issues related to the compliance schedule. The commenter submitted comments on the compliance schedule. Since no other requests for a hearing has come in and since the commenter submitted comments on the compliance schedule, the EPA has decided not to hold a public hearing on this permit.

Antidegradation Evaluation

Comment 75. Antidegradation evaluation public process (WFC/CELP)

We disagree with EPA's decision to forego an antidegradation analysis and rely on the Section 401 Certification from Ecology. EPA should have either 1) conducted its own antidegradation analysis and submitted that along with the rest of the draft permit to Ecology for Section 401 Certification, or 2) waited to issue this draft notice until after receiving and incorporating the antidegradation analysis in the "preliminary" Section 401 Certification from Ecology. It is impossible for us or any member of the public to give this draft permit an adequate review when

essential pieces are missing. EPA must allow another opportunity for public comments on this draft NPDES permit once an antidegradation analysis is available and included. (Fact Sheet, V.A, p. 22)

Response. At the request of Ecology, the EPA agreed to conduct an antidegradation evaluation for Ecology's CWA 401 certification. To ensure that the public had the opportunity to review the antidegradation evaluation, the EPA public noticed the antidegradation evaluation at the same time Ecology public noticed the 401 certification.

Comments received during Antidegradation Evaluation Public Comment Process (August 9, 2017 – September 15, 2017)

Comment 76. Antidegradation evaluation timing (WFC/CELP)

EPA did not include an antidegradation analysis when it released the draft NPDES permit for public notice, and instead released it with this draft certification.

Response. See RTC #75. The comment is noted.

Comment 77. Tier 1 protection (WFC/CELP)

While EPA correctly notes that a "facility must meet Tier I requirements to ensure that all existing and designated uses are maintained and protected" it only evaluated the permit (compliance with numeric water quality criteria) and not the full suite of the LNFH's activities. It is our assumption that Ecology will address these matters when issuing a final Section 401 certification.

Response. As noted by the commentor, the EPA only has authority to regulate discharges to waters of the U.S. from point sources. *See* 40 CFR 122.1(b). In determining the permit conditions for this permit, the EPA has established conditions to ensure compliance with state water quality standards. Ecology has provided the EPA with a CWA Section 401 certification stating that the LNFH permit meets Washington's state water quality standards as long as the EPA includes the conditions set forth in the certification. The EPA has included the conditions from the 401 certification pursuant to Section 401(d) of the Clean Water Act. The certification does not include additional requirements pertaining to the full suite of LNFH's activities.

Comment 78. Incorrect determination that full Tier II review is needed (WFC/CELP)

Following Washington's procedures for Tier II evaluation, EPA determines that there are no parameters that trigger a full Tier II review. We believe that EPA's determination is incorrect.

Response. The EPA followed guidelines from the Washington Department of Ecology's Supplemental Guidance on Implementing Tier II Antidegradation (Ecology, 2011b) to make its determination whether an antidegradation evaluation, or a "full Tier II review," was necessary. The document establishes guidelines for NPDES permit writers to assess antidegradation from authorized discharges from the permit on temperature, dissolved oxygen, bacteria, pH, turbidity, and toxic or radioactive substances. Pages 3-7 describe the analysis for the parameters subject to Tier II protections. Under this analysis, the EPA determined that a full Tier II is not triggered.

Comment 79. Failure to consider sediment discharges in turbidity analysis (WFC/CELP)

EPA failed to consider the discharge of sediment when LNFH cleans the water intake area at the water intake structure (RM 4.5; discussed below; references in the latest NOAA biological opinion [2015]). In addition, regarding the outfalls where the discharge of solids is permitted, EPA relies on best management practices and narrative directives in the permit to minimize the discharge of solids, but does not cite any monitoring data to show that the turbidity standard of 0.5 NTU will not be violated or has not been violated in the past.

Response. EPA evaluated turbidity data collected in 2010 and 2011 at the hatchery's intake and downstream of the hatchery at East Leavenworth Bridge. Data were collected weekly throughout the year. In the two-year period, NTU values of the East Leavenworth Bridge compared to the hatchery intake increased by 0.5 NTU or more 14 out of 104 times.

LNFH constructed a second pollution abatement pond that became operational in late 2011. It was designed to facilitate more frequent cleaning of the abatement ponds by allowing LNFH to shift influent to one pond while cleaning the unused pond. Therefore, it is expected that fewer solids are generated from the pollution abatement ponds currently than what was generated in 2010 and early 2011.

The limits for net TSS and net settleable solids in the permit are equal to or more stringent than the 1974 permit limits as described on pages 47-51 of the Fact Sheet. For instance, at Outfall 001, the 1974 permit established limits on settleable solids on the gross discharge. The current permit establishes limits on total settleable solids on the net discharge. This resulted in a change from the 1974 permit of an average daily limit of 704 kg/day to 474 kg/day. This reduction is also expected to result in lower turbidity levels. As in RTC #68, the permit also includes a new BMP from the 1974 permit in Section III.B.5(a)(ii) to minimize the discharge of accumulated solids from settling ponds, basins, and production systems and perform routing cleaning to ensure that solids are minimized.

The EPA is not aware of additional data of turbidity levels upstream and downstream of the hatchery to allow for a more recent comparison of hatchery contributions to turbidity. The EPA expects that given the low frequency of turbidity contributions above 0.5 NTU from LNFH between 2010 and 2011, the operation of the second pollution abatement pond in late 2011, stricter limits for TSS and net settleable solids in the current permit, and additional BMPs requiring a minimization of solids, that these taken together will result in the hatchery not contributing to more than 0.5 NTU of turbidity under the new permit and, thus, discharges under the permit will not cause degradation to the existing uses in Icicle Creek. The permit requires turbidity monitoring at the outfalls, upstream of the hatchery, and downstream of the pollution abatement ponds (Outfall 002) during cleaning events. This will provide information on turbidity contributions from the hatchery for the next permit cycle.

Comment 80. Ammonia toxicity (WFC/CELP)

Regarding ammonia toxicity, EPA makes a questionable assumption in that there would be no toxicity instream because ammonia toxicity has not been noted inside the LNFH's fish holding

structures. While EPA correctly notes that the relationship between ammonia and ammonium (and therefore the toxicity) is highly dependent on pH and temperature, it fails to note that the LNFH discharge is responsible for (high) pH excursions in Icicle Creek. The ammonia-ammonium relationship is also highly dependent on diel cycles, and the added stress of lower nighttime dissolved oxygen, higher pH, and ammonia may in fact cause downstream toxicity problems on low-flow summer nights following warm days. The monitoring for ammonia in EPA's draft permit (once-per-month grab samples for ammonia) will provide little information.

Response. Since no ammonia data have been collected at LNFH, EPA relied on operational information to conclude that ammonia toxicity would be unlikely to occur within the hatchery as explained on page 5 of the Antidegradation Evaluation. The EPA also noted that ammonia toxicity is dependent on pH and temperature. That is, ammonia is more toxic with higher pH levels and higher temperatures.

Effluent temperatures from the hatchery are low because of cold water from Snow and Nada Lake. The permit establishes an interim limit of 17ºC until December 1, 2023 when the final limits of 13ºC from August 15-July 15 and 16ºC from July 15 to August 14 take effect. Likewise, pH levels are not high in effluent as shown on Pages 80-84 in the Fact Sheet where the maximum pH from 2008-2011 was 7.5 S.U.

The comment notes the diel cycles of DO and pH, which may result from the hatchery's discharge. That is, algal growth from nutrients may lower dissolved oxygen levels and increase pH downstream, particularly during low flow, summer months. In order for ammonia to be present in toxic amounts, the fish would need to excrete a certain amount, temperatures would need to be high, and pH would also have to be high. From 2008-2011, LNFH conducted weekly temperature monitoring. The highest temperature was 17ºC at the East Leavenworth Bridge downstream of the hatchery during July 2009. Likewise, grab samples collected at East Leavenworth Bridge downstream of the hatchery in Icicle Creek showed a maximum pH level of 7.88 during May 2011. Ecology's 2002-2003 study for the Wenatchee River DO and pH TMDL concluded there were infrequent excursions of the pH standard and none of the DO standard downstream of the hatchery. Therefore, a pattern of high pH levels downstream of the hatchery that would cause ammonia toxicity has not been established.

Section I.B.7 of the permit prohibits discharges of "toxic substances, including drugs, pesticides, or other chemicals, in toxic amounts that may cause or contribute to an impairment of designated uses or violation of State of Washington water quality standards." This prohibition, the expected low amount of ammonia from fish excretion, and the relatively low temperatures and pH levels make it unlikely that ammonia toxicity will occur in measurable amounts. Thus, discharges under the permit will not cause degradation to the existing uses in Icicle Creek. The permit requires ammonia monitoring at the outfalls and upstream and downstream of the outfall. This will provide information on ammonia in effluent from the hatchery for the next permit cycle.

Comment 81. Validity of critical flows used to calculate dilution ratios (WFC/CELP)

EPA also uses its questionable low critical flows (as discussed above, EPA used an incomplete data set and failed to adjust for irrigation and city of Leavenworth diversion) to calculate dilution ratios. We do not believe those critical flows are valid.

Response. The comment is noted. Pages 6 and 7 of the Antidegradation Evaluation discuss dilution ratios calculated from critical flows. However, it also states that these dilution factors were not used to support the determination that the permit does not trigger a full Tier II review. They are simply supplemental information of dilution that may further result in lower concentrations of pollutants downstream.

Comment 82. Flushing sediment at the water intake structure (WFC/CELP)

Other than our comments above, we have no comments on the additional conditions to the draft NPDES permit, with the exception that neither EPA in the draft permit, nor Ecology in this draft certification, condition the LNFH's activity of flushing sediment at the water intake structure. According to NOAA (2015), LNFH personnel conduct "[m]aintenance at the point of diversion (i.e., sluicing or dredging material from the conveyance channel, sand settling chamber, and fish ladder) [and] causes a temporary increase in turbidity." Even if this happens on only an intermittent basis, this is an unpermitted discharge of pollutants from a point source into waters of the United States and must be permitted or ordered to cease.

Response. LNFH's permit application did not include a request to discharge from the water intake structure. The EPA develops NPDES permits for outfalls that a facility has applied for permit coverage. As such, the EPA's permit authorizes discharges from outfalls 001 through 006, which were included in the permit application. Without a NPDES permit application or further information from the permittee, the EPA is not making a determination at this time whether the activity at the intake structure constitutes a discharge from a point source.

References

Email communication from Emi Kondo, NOAA Affiliate, to Jennifer Wu, EPA. June 23, 2017. Subject re: *Question on EFH in the vicinity of the LNFH discharge?*

Email communication from Mark Mastin, USGS, to Jennifer Wu, EPA. July 11, 2017. Subject re: *Flow data quality "good" rating.*

Email communication from Malenna Cappellini, USFWS, to Jennifer Wu, EPA. July 13, 2017a. Subject re: *Clarification questions on LNFH NPDES permit comments.*

Email communication from Malenna Cappellini, USFWS, to Jennifer Wu, EPA. October 10, 2017b. Subject re: *QAP on LNFH permit.*

NOAA. 2017. *Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) Consultation, Leavenworth National Fish Hatchery Spring Chinook Salmon Program (Reinitiation 2016),* NMFS Consultation Number WCR-2017-7345. (September 2017).

USEPA. 1991. *Technical Support Document for Water Quality-Based Toxics Control*. US Environmental Protection Agency, Office of Water, EPA/833/B-93-004 (March 1991).

USEPA. 1993. *Guidance Manual for Developing Best Management Practices (BMP).* US Environmental Protection Agency, Office of Water, EPA 833-B-93-004 (October 1993).

USEPA. 2007a. *Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus*. US Environmental Protection Agency, Office of Water and Watersheds, EPA 910-R-07-002 (April 2007).

USEPA. 2007b. Memo from James Hanlon, EPA Office of Wastewater Management, to Alexis Strauss, EPA Region 9 re: *Compliance Schedules for Water Quality Based Effluent Limitations in NPDES Permits*. (May 10, 2007).

USEPA. 2010. *NPDES Permit Writers' Manual*. US Environmental Protection Agency, Office of Wastewater Management, EPA-833-J-10-001. (September 2010).

USEPA Region 10. 2016a. *NPDES General Permit for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of Washington State.* (June 2016).

USEPA Region 10. 2016b. *Preliminary Draft NPDES Fact Sheet USFWS Leavenworth National Fish Hatchery, NPDES Permit No. WA0001902.* (December 2016).

USEPA Region 10. 2016c. *Preliminary Draft NPDES Permit USFWS Leavenworth National Fish Hatchery, NPDES Permit No. WA0001902.* (December 2016).

USFWS. 2011. *Operations and Maintenance of the Leavenworth National Fish Hatchery*. USFWS Reference: 13260-2011-F-0048 and 13260-2011-P-0002. (May 2011)

Washington Department of Ecology. 1989. *Quality and Date of Fish Hatchery Effluents During the Summer Low Flow Season.* Publication No. 89-17. (May 1989).

Washington Department of Ecology. 2005. *Wenatchee River Temperature TMDL Study*. Publication No. 05-03-011. (August 2005).

Washington Department of Ecology. 2007. *Wenatchee River Temperature Total Maximum Daily Load Water Quality Improvement Report*. Publication No. 07-10-045. (July 2007).

Washington Department of Ecology. 2009. *Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Report*. Publication No. 08-10-062. (August 2009).

Washington Department of Ecology. 2011a. *Waters Requiring Supplemental Spawning and Incubation Protection for Salmonid Species*. Publication No. 06-10-038. (Revised 2011).

Washington Department of Ecology. 2011b. *Water Quality Program Guidance Manual: Supplemental Guidance on Implementing Tier II Antidegradation*. Publication No. 11-10-073. (September 2011)

Washington Department of Ecology. 2015a. *Water Quality Program Permit Writer's Manual.* Publication No. 92-109. (Revised January 2015).

Washington Department of Ecology. 2015b. *Upland Fin-Fish Hatching and Rearing General Permit.* (April 2016).

Washington Department of Ecology. 2017. *Final 401 Certification*. (November 22, 2017).