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**Date:** Oct. 14, 2021

**To:** Oregon Environmental Quality Commission

**From:** Richard Whitman, Director  
Jennifer Wigal, Deputy Water Quality Administrator  
Steve Mrazik, Manager, DEQ 401 Water Quality Program  
Connie Dou, Manager, Water Quality Standards Program  
Diane Lloyd, Oregon Department of Justice

**Subject:** Item A: Petition for a Declaratory Ruling from the Deschutes River Alliance:  
Application of the Dissolved Oxygen Water Quality Standard in the Lower  
Deschutes River  
Oct. 18, 2021, EQC special meeting

**Purpose of this item** The Deschutes River Alliance (DRA) submitted a petition for a declaratory ruling to the EQC on Aug. 19, 2021. The petition asks the commission to issue a ruling regarding how the EQC’s water quality standard for dissolved oxygen applies in the lower Deschutes River. The purpose of DRA’s petition is to alter or establish requirements for operation of the Pelton Round Butte hydroelectric project, which operates under a license from the Federal Energy Regulatory Commission.

**Background** EQC received a Petition for Declaratory Ruling from the DRA, dated Aug. 19, 2021. The petition requests that the commission open a proceeding “for a declaratory ruling requiring the Oregon Department of Environmental Quality to properly implement the state’s dissolved oxygen water quality standard (OAR 340-041-0016(1)(a) to protect resident trout spawning.” The purpose of the petition is to require operational changes in the Selective Water Withdrawal system at the Pelton Round Butte dam, operated by Portland General Electric and the Confederated Tribes of the Warm Springs Indian Reservation (CTWS) under the FERC license, which includes a water quality certification from DEQ that specifies how the project must operate in terms of water quality conditions downstream of the facility.

**Declaratory rulings**

The Oregon Administrative Procedures Act (ORS 183.410) allows an agency, which is in this case EQC, to issue a ruling about how a regulation that it enforces applies to a certain person, property or facts. The authority to make declaratory rulings is “designed to permit interested persons to obtain an agency opinion on a given legal issue as applied to a particular state of

facts. \* \* \* The statute does not appear to be designed to provide declaratory rulings in cases in which the facts are complex or are in dispute.” *Forelaws on Board v. Energy Fac. Siting Council*, 311 Or. 350, 359, 811 P.2d 636 (Or. 1991)

EQC follows the Oregon Attorney General’s model rules for declaratory rulings, seen in OAR 340-011-0061. According to the Attorney General’s Administrative Law Manual “an agency has complete discretion to give or refuse to give a declaratory ruling. \* \* \* The decision to refuse to give a ruling is not reviewable by a court.” Manual at 200, citing *United Brokers, Inc. v. Department of Agriculture*, [68 Or. App. 44](#), [680 P.2d 702](#) (1984).”

If EQC decides to grant the petition for a Declaratory Ruling, DEQ would then need to provide public notice, an opportunity for intervention (particularly for the operators of the Pelton facility, and likely others), and then provide for a proceeding before a hearings officer who would then issue a proposed ruling. The final decision on a ruling would be made by the EQC. Importantly, if EQC were to grant the petition and, after this procedure, issue a declaratory ruling, that ruling would be binding only upon the EQC and DRA, per ORS 183.410. For this reason, declaratory rulings are typically issued when a permit or license holder wishes to clarify how a particular legal requirement applies to their activities, not to specify how a rule of general applicability applies to many different factual situations.

### **Question presented by the Deschutes River Alliance**

The Deschutes River Alliance requests a declaratory ruling specifying that the Pelton Round Butte facility must be operated to meet a dissolved oxygen standard in the Lower Deschutes River below the Pelton Round Butte facility of not less than 11.0 mg/l, year-round. DRA’s petition includes testimony asserting that spawning and fry emergence of redband trout occur year-round.

### **Oregon’s and Confederated Tribes’ Water Quality Standard for Dissolved Oxygen**

The lower Deschutes River is subject to water quality standards adopted by the EQC. The section of the Deschutes River bordering the Warm Springs Reservation is also subject to standards approved by the Confederated Tribes of the Warm Springs Indian Reservation - both state and tribal standards also must be approved by the federal Environmental Protection Agency.<sup>1</sup> Oregon’s water quality standards for dissolved oxygen include criteria for cold water, cool water and warm water species, and criteria for salmonid

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<sup>1</sup> In general, the water quality standards of the CTWS are similar to Oregon state standards. This report does not address CTWS standards, except to note that a declaratory ruling by the EQC would not be binding on the CTWS, per ORS 183.410.

spawning. The segment of the lower Deschutes River between Pelton Dam and the Warm Springs River is identified as Core Cold Water (see Figure 1 in Attachment C) and, as a result, the base minimum criterion for dissolved oxygen is 8.0 mg/L. OAR 340-041-0016(2) (applied as a 30-day mean minimum per Table 21, if sufficient continuous monitoring data are available). In addition, for waters identified as Core Cold Water, where resident trout spawning are present, DEQ applies a more protective standard for the period from January 1 through June 15: a 7-day mean minimum of 11.0 mg/L or, if intergravel dissolved oxygen levels are 8.0 mg/L or greater, then the standard is 9.0 mg/L (measured as a 7-day mean minimum).

The full text of the applicable rule, including Table 21, which describes the interplay between the spawning and non-spawning portions of the rule, and the fish use designations for the Deschutes basin which are also part of the rule, are attached to this staff report as Attachment B. In addition, the memorandum describing when DEQ will apply the dissolved oxygen standard to waters to protect resident trout spawning is included as Attachment D. DEQ is evaluating the available data related to the resident trout spawning time periods in conjunction with Oregon Department of Fish and Wildlife experts and has not reached a definitive conclusion. This will be considered, as discussed below, within the current rulemaking effort.

### **Pelton Round Butte Hydroelectric Project 401 Water Quality Certification**

The Deschutes River Alliance is specifically interested in how the dissolved oxygen standard applies in this portion of the lower Deschutes River because of the standard's relation to management of the Pelton Round Butte hydroelectric project (the "PRB Project"). The PRB Project is co-owned by the Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon. As noted above, the PRB Project is operated according to the terms of a license issued by FERC in 2005, which includes a water quality certification issued by DEQ in 2002. The certification is the specific means by which EQC and CTWS water quality standards are applied to the PRB Project.

The DEQ certification requires that the PRB Project to comply with a Water Quality Management and Monitoring Plan (WQMMP; Petitioner DRA's Exhibit C, Page 64), which, in turn, includes as one part of the WQMMP a Dissolved Oxygen Management Plan, Exhibit C to DRA's Petition, at pages 65-67. The Dissolved Oxygen Management Plan acknowledges that the 11.0 mg/L standard applies to the PRB Project, *unless* the intergravel dissolved oxygen monitoring shows that the 8.0 mg/L (spatial median) level is met, in which case the alternate 9.0 mg/L standard (absolute) will apply. The

Dissolved Oxygen Management Plan also recognizes that modeling at the time of certification predicted that with operation of the SWW structure, dissolved oxygen levels would fall below 11.0 mg/L during the summer and early fall, and noted that if levels fell below the alternate standard of 9.0 mg/L during the spawning season, there would be a need for controlled spills from the reregulating dam.

DEQ's 401 certification for the PRB Project was issued before installation of the SWW structure, but anticipated and provided for that change in the project. Given the many competing variables and objectives in terms of fisheries and water quality, the certification also anticipated a number of years of testing and monitoring, under annual operating agreements. In 2017, following four years of data collection, including intergravel dissolved oxygen, DEQ determined that the alternative standard trigger of 8.0 mg/L IGDO was being met, and that as a result the applicable standard during the spawning season is 9.0 mg/L. Based on this multi-year monitoring, DEQ also specified that outside of the spawning season, the levels of the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum<sup>2</sup>, 6.5 mg/l as a seven-day minimum mean<sup>3</sup>, and may not fall below 6.0 mg/l as an absolute minimum (Exhibit C to DRA Petition, at pages 35-36). This is expressly allowed by the EQC rule.<sup>4</sup>

The 401 Water Quality certification for the PRB Project, and the WQMMP, were integral parts of a 2004 settlement agreement in the FERC licensing proceeding. That agreement was signed by the CTWS, PGE, and 20 other parties, including state, federal, and tribal agencies, environmental organizations, other local parties, and non-governmental organizations. In short, there are many interested parties in the operation of the PRB Project, and any changes in operation must proceed through procedures for modifying the certifications.

Currently, the Selective Water Withdrawal structure at the PRB Project is operated with the objective of meeting temperature and water quality standards in the lower Deschutes River and Project reservoirs. It also allows

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<sup>2</sup> i.e. the lowest value of rolling 30-day averages of daily mean D.O. concentration

<sup>3</sup> i.e. the lowest value of rolling 7-day averages of daily minimum D.O. concentration

<sup>4</sup> OAR 340-041-0016(2) provides:

“(2) For water bodies identified by the Department as providing cold-water aquatic life [and outside of salmon and trout spawning covered in subsection (1) of the rule], the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. \* \* \* At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21).”

the withdrawal of surface waters during juvenile salmonid smolt migration periods to facilitate the capture of downstream emigrating smolts from Lake Billy Chinook in support of the anadromous fish reintroduction into the Upper Deschutes basin. Restoring fish passage through the PRB Project and the reestablishment of anadromous fish runs upstream of the PRB Project were among the fundamental objectives of the multi-party Settlement Agreement for the relicensing of the PRB Project.

Beginning in late 2019, DEQ began considering modifying the 2002 water quality certification to be consistent with currently approved water quality standards, including those of the CTWS, and changes in Oregon's temperature standard. On March 31, 2020, PGE submitted proposed revisions to the WQMMP for the Pelton Round Butte Project. PGE submitted the proposal on behalf of itself, as the operator of the PRB Project, and the CTWS, the co-owner and joint licensee of the PRB Project.

#### **Data on resident trout spawning and DEQ's Rulemaking to Update Aquatic Life Uses**

DEQ is currently reviewing data to update fish and aquatic life use designations. The agency is initiating a rulemaking to update and refine these designations statewide, including in the Lower Deschutes basin. For spawning uses, the intent is to clarify when and where the designations apply in order to reduce confusion about the application of the different dissolved oxygen and temperature criteria. This project is a high priority identified during the 2017-2020 triennial review. DEQ initiated the project in 2020 and expects to complete it in 2022. Updated use designations will be proposed to the commission for adoption in late fall of 2022.

The rulemaking process includes gathering and evaluating scientific data, consulting with ODFW and the federal fisheries agencies, and obtaining peer review from a technical workgroup of fish biologists and habitat experts. The rulemaking process also includes stakeholder involvement and an opportunity for public comment, including a public hearing.

Following EQC adoption, the revised use designations will be submitted to EPA for approval. The revised uses, which are part of the water quality standards, are not effective for Clean Water Act purposes until they are approved by EPA. In this instance, because the water quality standards revisions are relevant for aquatic life, EPA will consult with the federal fisheries agencies under the Endangered Species Act prior to acting on the revisions.

**DEQ  
Recommendation**

DEQ recommends that the EQC deny the DRA Petition for the following reasons.

1. Fundamentally, DRA's Petition seeks to modify one of the terms of the existing 401 water quality certification for the Pelton project. Any change in that certification must be addressed under the terms of the certification, the EQC rules for modifying certifications (340-048-0050), and applicable federal law. Put directly, the requested declaratory ruling would have no effect on the FERC license holders and other parties to the settlement agreement that underpins the 401 certification; other actions would be necessary to modify the certification.
2. DRA's Petition raises complex issues of fact and statewide issues of policy and science that are best addressed through the ongoing statewide rulemaking to update and refine fish and aquatic life use designations that will be brought to the EQC in late 2022. These changes also need to undergo review by EPA and consultation with the federal fisheries agencies.
3. Finally, PGE, on behalf of the joint operators, has requested modification of its 401 certification for the Pelton Round Butte Project. That process will provide DRA with a specific opportunity to address the concerns and information that it believes should be addressed in the certification and accompanying WQMMP.
4. To the extent that DRA wishes to engage in a transparent and comprehensive effort to address temperature, dissolved oxygen and pollutants affecting these parameters, such as nutrients, in the Deschutes basin, the most appropriate process is the development and adoption of a Total Maximum Daily Load that identifies necessary reductions in pollutants from multiple sources in the basin, including areas above the Pelton Project.

**Next steps**

DEQ proposes that the EQC schedule an informational overview of issues concerning the operation of the Pelton Round Butte Project and associated issues concerning water quality in tributaries above and below the project in late winter 2022. This would provide an opportunity for representatives of the Project and other interested parties, including Deschutes River Alliance, to provide information and perspectives to the commission. This opportunity also could help inform work on both the water quality standards Fish and Aquatic Life Use Update rulemaking, and the

application to modify the 401 certification for the Pelton Round Butte Project.

**Attachments**

- A. Deschutes River Alliance Petition and attachments
- B. OAR 340-041-16, including Dissolved Oxygen Standard Table 21
- C. Figures 1 and 2: Fish Use Designations
- D. 2004 Memo from DEQ to EPA

August 19, 2021

Kathleen George, Sam Baraso, Molly Kile, and Wade Mosby  
Oregon Environmental Quality Commissioners  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

Dear Commissioners George, Baraso, Kile, and Mosby:

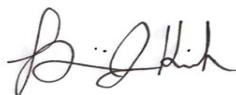
The Deschutes River Alliance respectfully but urgently submits this Petition for Declaratory Ruling. We call on the Oregon Environmental Quality Commission to use its statutory role to confirm the clear requirements of Oregon's dissolved oxygen criteria and to protect the lower Deschutes River's resident redband trout.

Over the last decade, the Oregon Department of Environmental Quality has signed a series of interim agreements that directly conflict with Oregon's water quality standards for dissolved oxygen. As a result, spawning and incubating resident redband trout in the lower Deschutes River have been subjected to long periods of insufficiently low dissolved oxygen. This has added environmental stresses on the species, who is already exposed to multiple other impaired water quality parameters.

Through this petition, we seek immediate action to benefit these long-suffering fish. The petition shows that the lower Deschutes' redband trout population has been well-studied, and data concerning their annual spawning period has only become more robust over the last decade. Despite this growing scientific knowledge, this petition also shows how dissolved oxygen management on the lower Deschutes directly conflicts with the scientific facts and the current state water quality standards.

We call on the Environmental Quality Commission to do the right thing for the lower Deschutes' redband trout and immediately direct the Department of Environmental Quality, based on years of study and documentation as described in both this petition and DEQ's own 2002 assessment, to adhere to the appropriate dissolved oxygen water quality standard in the lower Deschutes after June 15 each year "where resident trout spawning occurs, during the time trout spawning through fry emergence occurs."

Sincerely,



Ben Kirsch  
Staff Attorney, Deschutes River Alliance

Item A 000008



**BEFORE THE OREGON ENVIRONMENTAL QUALITY COMMISSION**

**Petition for Agency Declaratory Ruling to Determine the Applicability of the Resident Trout Spawning Dissolved Oxygen Standard in the lower Deschutes**

August 19, 2021

Pursuant to ORS 183.410 and OAR 137-002-0010, the Deschutes River Alliance hereby petitions the Oregon Environmental Quality Commission for a declaratory ruling requiring the Oregon Department of Environmental Quality to properly implement the state's dissolved oxygen water quality standard (OAR 340-041-0016(1)(a)) to protect resident trout spawning.

Oregon's dissolved oxygen regulation provides that "[n]o wastes may be discharged and no activities may be conducted that either alone or in combination with other wastes or activities will cause violation of [six] standards;" one of these standards is the following spawning standard:

(1) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), **the following criteria apply** during the applicable spawning through fry emergence periods set forth in the tables and figures and, **where resident trout spawning occurs, during the time trout spawning through fry emergence occurs:**

(a) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;"

OAR 340-041-0016(1)(a) (Emphasis added).

The Deschutes River Alliance (DRA) is a science-based advocacy organization seeking solutions to basin-wide threats to the health of the Deschutes River and its tributaries. We advocate for water quality, a healthy ecosystem, and for the establishment and protection of robust populations of resident and anadromous fish

throughout the river's entire watershed. DRA supporters rely on the Basin's continued health for their recreation, relaxation, and livelihoods.

Since its formation, DRA has sought to build and maintain a holistic scientific understanding of the Deschutes Basin. Since 2014, DRA has released annual reports on the lower Deschutes River water quality monitoring and on our macroinvertebrate hatch surveys. We have also released reports and studies on benthic health, thermal imaging, land use impact on water quality, and on the Crooked River's water quality.

In addition to our scientific research and studies, DRA has been involved in ensuring legal and administrative enforcement of state and federal laws in the lower Deschutes. DRA has also submitted comments on numerous state and federal actions affecting the basin.<sup>1</sup>

Here, the DRA seeks the Environmental Quality Commission's declaration to ensure appropriate protection of resident trout, a vital and iconic species in the lower Deschutes and in water bodies throughout the state.

**Per OAR 137-002-0010(6), the petitioners and other interested persons include:**

*Petitioner*

Deschutes River Alliance  
5520 S Macadam Ave., Suite 220  
Portland, OR 97239  
[ben@deschutesriveralliance.org](mailto:ben@deschutesriveralliance.org)  
[sarah@deschutesriveralliance.org](mailto:sarah@deschutesriveralliance.org)  
[danellis73@gmail.com](mailto:danellis73@gmail.com)

*Interested Persons*

Richard Whitman  
Director, Oregon Department of Environmental Quality  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

*Cc:*

Justin Green – Water Quality Division Administrator  
Sara Slater – Eastern Region Water Quality Manager

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<sup>1</sup> See <https://deschutesriveralliance.org/advocacy>.

## I. Question Presented

Does 340-041-0016(1) require the Oregon Department of Environmental Quality (DEQ) to apply that rule's resident trout spawning standard from "spawning through fry emergence" when there is evidence of redband spawning activity in the lower Deschutes? Stated differently, does OAR 340-041-0016(1) allow DEQ to ignore the spawning standard in the face of extensive factual evidence of significant post-June 15 redband trout spawning in the lower Deschutes River?"

## II. Relevant Background

The resident trout spawning DO standard – OAR 340-041-0016(1) establishes the required DO levels and prescribes when those levels apply. It states:

(1) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), **the following criteria apply** during the applicable spawning through fry emergence periods set forth in the tables and figures and, **where resident trout spawning occurs, during the time trout spawning through fry emergence occurs:**

(a) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

This standard is the lodestar for determining how the LDR's resident trout must be protected and assessing whether DEQ's implementation meets its requirements.

### A. Factual Background

The lower Deschutes River's redband trout<sup>2</sup> population is a locally and internationally treasured gem. The resident rainbow trout fishery is "internationally

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<sup>2</sup> "Redband" trout are also referred to as "rainbow" trout, both referring to *Oncorhynchus mykiss*.

known” and attracts anglers from around the world.<sup>3</sup> Numerous local businesses rely on the trout to, among other things, attract anglers to the region and to support guide services, fishing shops, hotels, and restaurants. Local pride in the fish is clear, with local schools taking the “redside” or redband trout as their mascot,<sup>4</sup> and many local business names honoring these fish.<sup>5</sup> The resident trout’s importance to the region cannot be overstated.

Since at least 2002, DEQ has been aware of the lower Deschutes’ resident trout’s specific biological rhythms and needs. The Department has noted the “vitally important” role that DO concentrations play for salmonids – including resident trout – who are “very sensitive to reduced quantities of DO,” especially during “various life redband stages” such as spawning and rearing.<sup>6</sup> DEQ was likewise aware that “[t]he waters downstream of the Project in the lower Deschutes River support salmonid spawning, with various species of salmonid spawning or egg incubation occurring practically year-round.”<sup>7</sup>

Despite this clear understanding of the biological requirements of LDR resident trout, DEQ has failed to apply the state’s crystal-clear water quality requirement for DO.

The Deschutes River Alliance (DRA) has observed and documented spawning behavior into August one mile below the lowermost Pelton Round Butte Hydroelectric Project (“PRB” or “the Project”) dam – the Reregulating Dam.<sup>8</sup> The date of DRA’s observations is important.

Beginning in 2011, DEQ entered into a series of “interim” agreements (IAs) with Portland General Electric (PGE), pursuant to which DEQ agreed to ignore the temperature requirements in the applicable § 401 CWA certifications and state water quality standards at PRB. In the 2012 IA, DEQ incorporated an interim DO standard, pursuant to which, from June 16 and October 14, DEQ agreed to allow a lower DO level

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<sup>3</sup> Bureau of Land Management. “Final Section 7(a) Determinations, Wild and Scenic Rivers Act for the Pelton Round Butte Hydroelectric Project.” July 2004. *See* Exhibit E at pgs. 27-28.

<sup>4</sup> *See* <https://www.swasco.net>.

<sup>5</sup> *See* the Rainbow Market in Warm Springs, OR and the Rainbow Tavern in Maupin, OR, among others.

<sup>6</sup> DEQ. “Final Findings and Evaluations Report on the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act.” June 19, 2002. At pg. 67. *See* Exhibit E at pg. 12.

<sup>7</sup> *Id.* at pg. 68. *See* Exhibit E at pg. 13.

<sup>8</sup> DRA. Pollution Complaint #20-2069 submitted to DEQ. August 2020. *See* Exhibit B at pgs. 8-10.

in the LDR than required by the clear regulatory language.<sup>9</sup> Accordingly, via the interim agreements DEQ has allowed PGE to violate the clear limits of state rules. They were, moreover, promulgated without public notice and comment. And the DEQ's private agreements with the PRB owners has occurred even in the face of actual and known resident trout spawning behavior.

On the basis of a purported "lack of site specific information," DEQ long ago informed the federal EPA that it "deemed" the resident trout spawning periods to be from October 15 through June 15 in the LDR.<sup>10</sup> But that 'deeming' was not then (in 2004) nor since reflected in the state's water quality standards, which constitute state law and as such are legally binding.

The redband trout spawning period in the lower Deschutes River has been extensively studied. Prior to PRB's most recent relicensing, at least two studies provided evidence of resident trout spawning that conflict with DEQ's current "deemed" period.<sup>11</sup> DEQ itself determined that salmonid spawning occurs "practically year-round" in the lower Deschutes River just two years before its 2004 letter.<sup>12</sup> Evidence of post-June 15 spawning has grown since 2004. ODFW has refined its fish use maps<sup>13</sup> and has opined on the growing, "protracted" redband trout spawning period in the lower Deschutes.<sup>14</sup> PGE has also undertaken yearly spawning surveys.<sup>15</sup> All of this

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<sup>9</sup> DEQ and PGE. "Section 401 Interim Agreement For the Pelton Round Butte Hydroelectric Project." May 2012. *See* Exhibit C at pg. 19.

<sup>10</sup> Letter from Michael T. Llewellyn (DEQ) to Randy Smith (EPA) "Re: Oregon Responses to EPA Questions re the State's water quality temperature standards." February 4, 2004. (Hereinafter "2004 Letter"). *See* Exhibit C at pg. 4. *See also* Exhibit B at pg. 16.

<sup>11</sup> *See* Zimmerman, C. E., and G. H. Reeves. 1999. Steelhead and resident rainbow trout: early life history and habitat use in the Deschutes River, Oregon. Report prepared for Portland General Electric Company, Portland, Oregon.

*Cited by* FERC. "Final Environmental Impact Statement for Hydropower Relicensing - Pelton Round Butte Hydroelectric Project, Oregon." FERC/FEIS -0165F. June 2004. At pg. 156, FN 58. *See* Exhibit E at pg. 24.

*See also* Cooney, C. X., J. K. Lloyd, J. K. Bowers, and M. J. Hogansen. 2003. 1:24K Fish Habitat Distribution Development Project Completion Report. Oregon Department of Fish and Wildlife, Salem.

*Available at:* <https://nrimp.dfw.state.or.us/nrimp/24k/docs/finalreport.pdf>.

<sup>12</sup> DEQ. "Final Findings and Evaluations Report on the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act." June 19, 2002. At pg. 68. *See* Exhibit E at pg. 13.

<sup>13</sup> *See* Current ODFW maps available at: [https://nrimp.dfw.state.or.us/FHD\\_FPB\\_Viewer/index.html](https://nrimp.dfw.state.or.us/FHD_FPB_Viewer/index.html).

<sup>14</sup> Letter from Rod French (ODFW) to Jonah Sandford (DRA), "Re: Deschutes redband trout spawning." February 27, 2019. *See* Exhibit D at pgs. 4-5.

<sup>15</sup> PGE and CTWSRO. "Re: Project No. 2030 - Pelton Round Butte Hydroelectric Project Article 433 - Lower River Gravel Study - 2015 Final Report Lower River Gravel Study: Pelton Round Butte Hydroelectric Project and Final Lower Deschutes River Gravel Study Five Year Review." Submitted April

information clearly refutes the claimed “lack of site specific information” for the lower Deschutes.

The present petition comes after years of DRA efforts to have DEQ implement the law properly to reflect the clear requirements of the regulations in light of the lifecycle requirements of resident redband trout.

## **B. Procedural Background**

In August 2020, the DRA filed a pollution complaint with DEQ.<sup>16</sup> The complaint cited August 1, 2020 observations by DRA science team members of trout spawning behavior directly below the Pelton Reregulating Dam occurring over a freshly made redd and included photographic evidence - alerting DEQ to resident trout spawning well past June 15. These observations directly implicated DEQ’s above-discussed private agreements with PRB owners, under which the Department agreed not to apply the dissolved oxygen spawning standard in the lower Deschutes, which applies “**where resident trout spawning occurs, during the time trout spawning through fry emergence occurs.**”

In early September 2020, however, DEQ informed DRA that it was closing the pollution complaint without taking further action. DEQ justified its inaction by claiming it “implements the dissolved oxygen criteria based on the guidance [DEQ] provided to EPA in support of their approval of our dissolved oxygen standards,” and on “the currently designated peak period of resident trout spawning for this reach of the Deschutes.”<sup>17</sup> DEQ’s subsequent response to a public records request<sup>18</sup> made it clear that the only “guidance” that the Department relied on for resident trout spawning DO implementation is the aforementioned 2004 Letter.

In October 2020, DRA petitioned for reconsideration of its pollution complaint,<sup>19</sup> alleging that DEQ was not entitled to rely on its 2004 letter to EPA. The Oregon Department of Justice responded, on December 10, that DRA’s petition was not ripe for

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1, 2016. Available at: <https://drive.google.com/file/d/1D3Z1xaaFQIWAAaDox0T-qRVBaYGNDUoPn/view?usp=sharing>. See excerpts Exhibit E at pgs. 30-58.

<sup>16</sup> DRA Pollution Complaint #20-2069. See Exhibit B at pgs. 8-10.

<sup>17</sup> DEQ. Email from Eric Nigg (DEQ) to Ben Kirsch (DRA) “Re: DRA complaint response.” September 8, 2020. See Exhibit B at pgs. 11-12.

<sup>18</sup> DRA. DEQ Public Records Request – Reference No. R000552-091020. Submitted September 9, 2020.

<sup>19</sup> DRA. “RE: Petition for Reconsideration, Pollution Complaint # 20-2069.” October 13, 2020. See Exhibit B at pgs. 2-7.

reconsideration,<sup>20</sup> on the basis of its assertion that that DEQ's closing of DRA's pollution complaint was not final agency action.

On March 19, 2021, DRA submitted a "Petition for Policy Direction"<sup>21</sup> to the Environmental Quality Commission (EQC), asking the Commission to direct DEQ (1) to implement the spawning DO standard year-round in the lower Deschutes River and (2) to reject any future DO implementation based on the DEQ's 2004 Letter to the EPA. DRA submitted this petition more than 60 days prior to the next scheduled EQC meeting to ensure that the Commission had enough time to consider and resolve the issue prior to its May meeting – the last meeting before June 15 and after which date, based on prior practice, we anticipated that DEQ would cease applying the protective DO spawning criterion to the LDR.

The EQC responded to DRA's March 19 Petition on April 20, 2021.<sup>22</sup> EQC stated that it was treating the petition as a "Petition for Rulemaking," and further, because the DRA petition did not adhere to the formal requirements of a Petition for Rulemaking, as an informal correspondence that merited no formal EQC response.

DRA then clarified the issue by letter on May 17, 2021, explaining to the Commission the intent of DRA's March 19 petition, reiterating our requested relief and seeking to be added to the EQC's May regular meeting agenda.<sup>23</sup> DRA also reached out to each of the four commissioners and the EQC's counsel at the DOJ asking again for action and to be included in the May meeting. But the EQC did not place DRA's DO petition on the agenda and, in fact, did not substantively respond at all to DRA prior to its May 20, 2021 meeting. DRA thus provided testimony during the public comment, again seeking EQC action.

DRA has not received any response from any of the EQC commissioners, EQC staff, or DOJ counsel to its May 17 clarifying letter or to its March 19 Petition for Policy Direction. As such, this Petition for Declaratory Ruling here is the appropriate and necessary next step to ensure that dissolved oxygen in the lower Deschutes River is governed not by an informal, non-promulgated interpretation but by the current, EQC-

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<sup>20</sup> DOJ. "Re: Petition for Reconsideration, Pollution Complaint # 20-2069, DOJ File No. 340310-GN0254-20." December 10, 2020. *See* Exhibit B at pgs. 20-21.

<sup>21</sup> DRA. "Petition for Policy Direction Regarding the Dissolved Oxygen Water Quality Standard Applicable to the Resident Redband Trout Spawning through Fry Emergence Period in the Lower Deschutes River." March 19, 2021. *See* Exhibit B at pgs. 22-28 (Petition's Exhibits available upon request).

<sup>22</sup> EQC. Email from Stephanie Caldera (EQC) to Ben Kirsch (DRA) "Re: DRA Petition on DO check-in" April 20, 2021. *See* Exhibit B at pgs. 29-31.

<sup>23</sup> DRA. Letter clarifying Petition for Policy Direction. May 13, 2021. *See* Exhibit B at pgs. 32-33.

and EPA-approved state water quality standards found in the Oregon Administrative Rules.

### **C. Applicable Law**

The resident trout spawning DO standard's implementation is guided by four sets of laws - the DO standard itself, the water quality standards' stated purpose, the EQC's and DEQ's statutory powers, and the Oregon's administrative rulemaking laws and procedures.

#### Dissolved Oxygen Standard - OAR 340-041-0016

Most important for this petition is the actual wording of the resident trout spawning DO standard, found in Oregon's water quality standards. Section 1 of the DO standard deals with spawning and is functionally split into two clauses - designated uses and resident trout. This split describes the different triggers for when heightened DO levels<sup>24</sup> are required. The split also indicates an intent to treat these fish species differently.

The designated uses clause references a collection of basin-specific maps that specify where and when spawning occurs. Spawning DO is triggered at the specific times and places of those promulgated maps.

The resident trout clause, on the other hand, is constructed more simply. It requires the spawning DO standard to be enforced "where resident trout spawning occurs, during the times trout spawning through fry emergence occurs." Those two triggers - where and when resident trout spawn and incubate - are the only requirements. Instead of specifying locations and specific timing, the promulgated rule ties implementation to resident trout behavior. As a result, resident trout are protected differently than other salmonids.

#### Water Quality Standards' Stated Purposes and Antidegradation Policy

The water quality standards provide the plan "for management of the quality of public waters within the State of Oregon." OAR 340-041-0001(1). They work in conjunction with other laws and rules to implement the state policy for water pollution control laws. ORS 468B.015. The policy calls for DEQ and the EQC to "protect, maintain,

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<sup>24</sup> As delineated in OAR 340-041-0016(1)(a), (b), & (c). See Exhibit A at pg. 21.



and improve the quality of waters” for, among other reasons, “the propagation of wildlife, fish and aquatic life” and to “protect the legitimate beneficial uses” of Oregon’s waters. ORS 468B.015(2) & (3). The water quality standards also direct DEQ to continually “manage water quality by evaluating discharges and activities, whether existing or a new proposal, on a case-by-case basis, based on best information currently available...” OAR 340-041-0001(2).

Additionally, the antidegradation policy is essential in guiding the standards’ implementation and assuring that all progress made is maintained. The policy is intended "to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses." OAR 340-041-0004(1).

Finally, Oregon’s water quality standards state that, “notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels...” OAR 340-041-0007(1).

### Statutory Powers

The legislature designated both the EQC and DEQ as the agencies tasked with maintaining Oregon’s waters, though with different roles. The EQC takes an advisory role – establishing DEQ’s policies and adopting rules necessary to execute the state’s policies. ORS 468.015 and 468.020. DEQ, on the other hand, is tasked with executing Oregon’s laws, rules, policies, and plans related to environmental quality – subject to EQC policy direction. ORS 468.035. This includes “tak[ing] such actions as is necessary for the prevention of new pollution and the abatement of existing pollution.” ORS 468B.020.

### Rulemaking Procedures

The state’s administrative rulemaking process is governed by the Oregon Administrative Procedures Act<sup>25</sup> (OR APA) and by the Oregon Department of Justice’s (ODOJ) Model Rules for Rulemaking.<sup>26</sup> The OR APA establishes a number of required

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<sup>25</sup> ORS 183.310 *et seq.* See excerpts Exhibit A at pgs. 2-14.

<sup>26</sup> OAR 137-001. See excerpts Exhibit A at pgs. 18-20.

rulemaking steps, including public notice and an opportunity for comment (ORS 183.335) and filing requirements (ORS 183.355). It also allows for the Model Rules' further governance. ORS 183.341.

The ODOJ's Model Rules expand on the required rulemaking procedures. These expansions include the required steps for giving public notice (OAR 137-001-0011), creating and maintaining a record of the rulemaking proceedings (OAR 137-001-0040), considering all submitted comments (OAR 137-001-0050), and filing any newly adopted rule with the Oregon Secretary of State (OAR 137-001-0060).

### **III. Arguments**

DEQ's pattern and practice of ignoring the clear terms of OAR 340-041-0016(1) cannot be justified by its 2004 Letter to EPA. Instead, the EQC should require DEQ to implement the spawning DO standard year-round in the LDR, given that the "various species of salmonid spawning or egg incubation occur[s] practically year-round."<sup>27</sup>

#### **A. DEQ's DO implementation in the LDR deviates from state water quality standards and fails to meet the standards' statutory purpose**

Oregon's resident trout spawning DO standard is clear and unambiguous, and its application to specific reaches of waterways needs to be based on the timing of resident trout activity. While *some* Oregon waterways may lack data, there is an ample scientific data on resident trout spawning in the LDR.

For resident trout, only two qualifiers exist for spawning DO to apply – location and timing. With regard to location, the spawning DO standard applies "where resident trout spawning occurs."<sup>28</sup> With regard to timing, the standard applies "during the time trout spawning through fry emergence occurs."<sup>29</sup>

Accordingly, where and when resident trout are spawning, DEQ must ensure that those bodies of water provide DO levels that support resident trouts' biological needs. Put simply: the spawning DO standard applies (1) any place that resident trout

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<sup>27</sup> ODFW. Letter from Rod French to Jonah Sanford. See Exhibit D at pg. 4.

<sup>28</sup> OAR 340-041-0016(1). See Exhibit A at pg. 21.

<sup>29</sup> *Ibid.*

spawn (2) during the times they *actually* spawn, and continues to apply through fry emergence.<sup>30</sup>

DEQ's February 2004 Letter to EPA did not itself change, or reflect any prior change in the state's water quality standard for dissolved oxygen. EPA's response to DEQ indicated as much.<sup>31</sup> One DEQ official has asserted that the 2004 Letter was "in support of [EPA's] approval of [DEQ's] dissolved oxygen standards,"<sup>32</sup> but that is clearly incorrect. As clearly indicated in the EPA supporting document cited in footnote 31, EPA approved no change to the resident trout spawning DO standard, nor did EPA approve any change to the DO standard as a whole. There is no pending change from the approved DO standard before the EQC. The 2004 DEQ Letter to EPA simply cannot legally modify a previously-approved and promulgated water quality standard.

**B. There was, and is, ample site-specific lower Deschutes River resident trout spawning data and it calls for immediate corrective action**

DEQ's 2004 Letter was predicated on a purported "lack of site specific information."<sup>33</sup> However, there was no such lack of site-specific information - at least not for the lower Deschutes River. Indeed, a plethora of site-specific trout spawning data for the LDR existed prior to DEQ's 2004 Letter. The record establishes that, at the time, both FERC<sup>34</sup> and the Oregon Department of Fish and Wildlife (ODFW)<sup>35</sup> had pertinent information concerning resident trout spawning in the LDR. And the documentary record clearly indicates that DEQ was aware of "practically year-round"

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<sup>30</sup> Resident trout spawning DO protections are in addition to and distinct from the map-based designations provided for other spawning salmonids. See "Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Table 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 203B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B" as identified in OAR 340-041-0016(1).

<sup>31</sup> EPA "Supporting Documents for EPA's Action Reviewing New or Revised Water Quality Standards for the State of Oregon." March 2, 2004. At page 44 (indicating that EPA was "not acting on Oregon's dissolved oxygen criterion" because DEQ had not even proposed "a new or revised water quality standard." See Exhibit C at pg. 13.

<sup>32</sup> DEQ. Email from Eric Nigg to Ben Kirsch. See Exhibit B at pg. 12.

<sup>33</sup> DEQ. Letter from Michael Llewellyn to Randy Smith. Page 3. See Exhibit C at pgs. 4.

<sup>34</sup> Zimmerman and Reeves (1999). See *infra* at Note 11.

<sup>35</sup> See ODFW. "Deschutes R below Pelton Dam – Non-Anadromous Species." Timing Unit ID: 10362. Nov. 10, 2003. See Exhibit D at pg. 2.

See also Cooney, C. X., J. K. Lloyd, J. K. Bowers, and M. J. Hogansen. 2003. 1:24K Fish Habitat Distribution Development Project Completion Report. Oregon Department of Fish and Wildlife, Salem.

Available at: <https://nrimp.dfw.state.or.us/nrimp/24k/docs/finalreport.pdf> at pgs. 62 and 94.

DEQ is aware of, and uses, the charts in Exhibit D today. Its stated peak spawning periods align with these maps. However, DEQ fails to consider the "less-use" periods indicated on the maps when implementation the regulatorily-mandated DO spawning standard.

salmonid spawning and that the protective spawning DO standard was needed year-round in the lower Deschutes River just two years before its claimed “lack of site specific information.”<sup>36</sup>

DEQ’s failure to enforce the proper dissolved oxygen water quality standard in the LDR additionally overlooks relevant resident trout spawning data<sup>37</sup> that was developed by PGE between 2007 and 2014. PGE has observed and reported indications of post-June 16 trout spawning every year in that period: June 20 (for 2007), July 1 (for 2008), June 30 (for 2009), June 21 (for 2010), June 22 (for 2011), June 26 (for 2012), June 11 (for 2013), and July 1 (for 2014).<sup>38</sup> It is important to note that each of these dates was the last day data were collected that year, indicating that spawning almost certainly occurred after those dates as well. As well, trout eggs incubate for at least one month after spawning – extending the period when the spawning DO standard must be applied.<sup>39</sup> These spawning surveys were shared annually with the PRB Fish Committee, of which DEQ is a participating member.

In addition, ODFW has further expanded its publicly available fish use data to include an interactive map.<sup>40</sup> From the growing resident trout data, ODFW biologists now opine that resident trout spawning can be quite protracted and, in some places, occurs year-round. For the lower Deschutes, ODFW biologists assume that resident redband trout spawning occurs for seven months, presumably until at least September 1.<sup>41</sup> The egg incubation period would then extend the period until at least October 1. Additionally, the spawning standard applies to *all* spawning through fry emergence, and is not limited to peak periods.<sup>42</sup>

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<sup>36</sup> DEQ. “Final Findings and Evaluations Report on the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act.” June 19, 2002. At pg. 68. See Exhibit E at pg. 13.

<sup>37</sup> Specifically, FERC’s 2004 Environmental Impact Statement (Exhibit E at pgs. 14-24), DEQ’s 2004 Evaluation and Findings Report (Exhibit E at pgs. 2-13), the 1999 Zimmerman and Reeves Report (See *infra* at Note 11), and ODFW charts (Exhibit D at pg. 2).

<sup>38</sup> PGE and CTWSRO. “Re: Project No. 2030 – Pelton Round Butte Hydroelectric Project Article 433 – Lower River Gravel Study – 2015 Final Report Lower River Gravel Study: Pelton Round Butte Hydroelectric Project and Final Lower Deschutes River Gravel Study Five Year Review.” Submitted April 1, 2016. Available at: <https://drive.google.com/file/d/1D3Z1xaaFQIWAaDox0T-qRVBaYGNDUoPn/view?usp=sharing>. See also Exhibit E at pgs. 30-58.

<sup>39</sup> OAR 340-041-0016(1) applies the spawning DO standard “during the time trout spawning *through fry emergence* occurs.” (emphasis added). See Exhibit A at pg. 21.

<sup>40</sup> Available at: [https://nrimp.dfw.state.or.us/FHD\\_FPB\\_Viewer/index.html](https://nrimp.dfw.state.or.us/FHD_FPB_Viewer/index.html)

<sup>41</sup> Letter from Rod French to Jonah Sandford, “Re: Deschutes redband trout spawning.” See Exhibit D at pg. 4-5.

See also 2004 ODFW charts (Exhibit D at pg. 2).

<sup>42</sup> “...during the time trout spawning through fry emergence occurs”. OAR 340-041-0016(1). See Exhibit A at pg. 21.

Taking all the available information into account, it is and has been clear that resident trout in fact spawn and incubate in the lower Deschutes River well past June 15.<sup>43</sup>

By establishing that fact, immediate action must be taken to correct DO management in the lower Deschutes River. While DEQ has indicated that it is planning to act to update the DO criteria, there are two issues with delaying until the Department acts. First, DEQ has stated that the updated criteria will not be “presented to EQC” until the “Spring of 2022.”<sup>44</sup> This puts the 2022 resident trout spawning season in likely jeopardy of insufficient DO levels for yet another year.

Second, and potentially worse, is that DEQ’s poor track record with meeting self-imposed schedules and deadlines. As just one example, this exact issue – fish and aquatic life use updates – was identified in the Department’s 2018-2020 Triennial Review.<sup>45</sup> There, DEQ gave itself the deadline of beginning the rulemaking process in late 2019 and completing it in early 2020.<sup>46</sup> Though the issue was given “high priority” in the 2021-2024 Triennial Review,<sup>47</sup> without a legally-actionable deadline, there is no guarantee that the DO criteria will change in 2022 or even in the next few years.

After almost a decade of insufficient DO management, immediate action must be taken. Waiting for DEQ action will likely subject the lower Deschutes’ resident trout to inadequate DO for another spawning season – and possibly for more spawning seasons after that. Waiting for these changes while the current rules are being ignored is not and cannot be the proper course of action.

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<sup>43</sup> A little over ten months prior to DEQ’s 2004 letter to EPA, the U.S. District Court for the District of Oregon found that Oregon’s water quality criteria could not be approved in the absence of “accurate time and place designations” for salmonid and bull trout rearing and spawning. *Northwest Environmental Advocates v. EPA*, 268 F. Supp. 2d 1255, 1269 (D. Or. 2003). The court’s determination was based on the fact that EPA had “found that Oregon lacked critical information on waterways and misidentified the times and places where spawning, rearing, and incubation occurred.” *Id.* at 1267. Here, in the face of accurate time and place data for redband trout spawning in the LDR, DEQ has actively chosen to misidentify the time of redband spawning, rearing, and incubation annually every year since 2012, which appears directly at odds with the court’s ruling in *NWEA v. EPA*.

<sup>44</sup> Email from Eric Nigg to Ben Kirsch. See Exhibit B at pg. 12.

<sup>45</sup> DEQ. “Water Quality Standards & 2018 – 2020 Program Priorities.” December 2017. See Exhibit C at pgs. 68-75.

<sup>46</sup> *Id.* at Exhibit C pg. 75.

<sup>47</sup> DEQ. “Water Quality Standards Triennial Review Report and 2021 – 2024 Work Plan.” July 2021. See Exhibit C at pg. 79.

### **C. DEQ's 2004 Letter and the so-called "Interim Agreements" are Not Valid State Rules**

The Oregon Legislature designated the EQC as the rulemaking body in the environmental quality context.<sup>48</sup> As such, the EQC – and it alone – has the power to establish rules. If DEQ wanted to change the trout spawning DO standard, it needed to seek approval from the EQC.

To the extent that DEQ's reliance on the 2004 Letter reflects its hope that the EQC will retroactively approve its 'deeming' of a constricted statewide resident trout spawning period, we need only observe that this has not been done. The letter did not purport or propose to change state rules; neither were its provisions concerning the dissolved oxygen spawning criterion subject to notice and comment or other procedure designed to safeguard the public interest in rational agency decision-making per ORS 183.333 – 183.370 and OAR 137-001; and DEQ has no power to promulgate a rule.<sup>49</sup>

That is, even if DEQ's ad hoc justifications of its trout spawning DO implementation retain some superficial aspects of an administrative rule, it is clearly not and should not be treated as such.

Similarly, DEQ's practice of privately striking interim agreements with the PRB owners is no rulemaking. The IAs appear to designate non-spawning periods for the LDR based on the same overly general basis of DEQ's 2004 Letter - arbitrarily deeming trout spawning protections to terminate after June 15.<sup>50</sup> But, as noted above, at least with regard to the lower Deschutes, this 'deeming' is simply contrary to the specific available evidence. DEQ's IAs allowing the PRB to violate the DO standard underwent no relevant public procedure and received no EQC (or EPA) approval. As such, the IAs also are not sanctioned state rules governing DO criterion implementation in the LDR.

In sum, DEQ's current DO implementation in the lower Deschutes River has no legitimate legal basis.

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<sup>48</sup> ORS 468.020. *See* Exhibit A at pg. 14.

<sup>49</sup> *See* ORS 468.035. That authority is reserved to the Commission. ORS 468.015, 468.020. *See* Exhibit A at pgs. 14-17.

<sup>50</sup> 2012 Interim Agreement. *See* Exhibit C at pgs. 17-20.

#### **IV. Relief Sought**

DRA seeks an EQC declaratory ruling that, in light of extensive factual evidence of post-June 15 redband trout spawning in the lower Deschutes River, OAR 340-041-0016(1) requires DEQ to apply that rule's resident trout spawning standard from "spawning through fry emergence" when there is evidence of redband spawning activity in the lower Deschutes.

## **EXHIBIT A**

Cited Law



**Oregon Revised Statutes (ORS)**

**ORS 183.310 – Definitions for Chapter**

...

(9) Rule means any agency directive, standard, regulation or statement of general applicability that implements, interprets or prescribes law or policy, or describes the procedure or practice requirements of any agency. The term includes the amendment or repeal of a prior rule, but does not include:

- (a) Unless a hearing is required by statute, internal management directives, regulations or statements which do not substantially affect the interests of the public:
  - (A) Between agencies, or their officers or their employees; or
  - (B) Within an agency, between its officers or between employees.
- (b) Action by agencies directed to other agencies or other units of government which do not substantially affect the interests of the public.
- (c) Declaratory rulings issued pursuant to ORS 183.410 (Agency determination of applicability of rule or statute to petitioner) or 305.105 (Declaratory rulings by department).
- (d) Intra-agency memoranda.
- (e) Executive orders of the Governor.
- (f) Rules of conduct for persons committed to the physical and legal custody of the Department of Corrections, the violation of which will not result in:
  - (A) Placement in segregation or isolation status in excess of seven days.
  - (B) Institutional transfer or other transfer to secure confinement status for disciplinary reasons.

(C) Disciplinary procedures adopted pursuant to ORS 421.180 (Disciplinary procedures).

**ORS 183.341 – Model Rules for Procedure**

(1) The Attorney General shall prepare model rules of procedure appropriate for use by as many agencies as possible. Except as provided in ORS 183.630 (Model rules of procedure), any agency may adopt all or part of the model rules by reference without complying with the rulemaking procedures under ORS 183.335 (Notice). Notice of such adoption shall be filed with the Secretary of State in the manner provided by ORS 183.355 (Filing and taking effect of rules) for the filing of rules. The model rules may be amended from time to time by an adopting agency or the Attorney General after notice and opportunity for hearing as required by rulemaking procedures under this chapter.

(2) Except as provided in ORS 183.630 (Model rules of procedure), all agencies shall adopt rules of procedure to be utilized in the adoption of rules and conduct of proceedings in contested cases or, if exempt from the contested case provisions of this chapter, for the conduct of proceedings.

(3) The Secretary of State shall publish in the Oregon Administrative Rules:

(a) The Attorney General's model rules adopted under subsection (1) of this section;

(b) The procedural rules of all agencies that have not adopted the Attorney General's model rules; and

(c) The notice procedures required by ORS 183.335 (Notice) (1).

(4) Agencies shall adopt rules of procedure which will provide a reasonable opportunity for interested persons to be notified of the agency's intention to adopt, amend or repeal a rule.

(5) No rule adopted after September 13, 1975, is valid unless adopted in substantial compliance with the rules adopted pursuant to subsection (4) of this section.

**ORS 183.335** – Notice; content; public comment; temporary rule adoption, amendment or suspension; substantial compliance required.

(1) Prior to the adoption, amendment or repeal of any rule, the agency shall give notice of its intended action:

- (a) In the manner established by rule adopted by the agency under ORS 183.341 (4), which provides a reasonable opportunity for interested persons to be notified of the agency's proposed action;
- (c) In the bulletin referred to in ORS 183.360 at least 21 days prior to the effective date;
- (d) At least 28 days before the effective date, to persons who have requested notice pursuant to subsection (8) of this section; and
- (e) Delivered only by electronic mail, at least 49 days before the effective date, to the persons specified in subsection (15) of this section.

(2) (a) The notice required by subsection (1) of this section must include:

- (A) A caption of not more than 15 words that reasonably identifies the subject matter of the agency's intended action. The agency shall include the caption on each separate notice, statement, certificate or other similar document related to the intended action.
- (B) An objective, simple and understandable statement summarizing the subject matter and purpose of the intended action in sufficient detail to inform a person that the person's interests may be affected, and the time, place and manner in which interested persons may present their views on the intended action.

(b) The agency shall include with the notice of intended action given under subsection (1) of this section:

- (A) A citation of the statutory or other legal authority relied upon and bearing upon the promulgation of the rule;
- (B) A citation of the statute or other law the rule is intended to implement;

- (C) A statement of the need for the rule and a statement of how the rule is intended to meet the need;
  - (D) A list of the principal documents, reports or studies, if any, prepared by or relied upon by the agency in considering the need for and in preparing the rule, and a statement of the location at which those documents are available for public inspection. The list may be abbreviated if necessary, and if so abbreviated there shall be identified the location of a complete list;
  - (E) A statement of fiscal impact identifying state agencies, units of local government and the public that may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public. In considering the economic effect of the proposed action on the public, the agency shall utilize available information to project any significant economic effect of that action on businesses which shall include a cost of compliance effect on small businesses affected. For an agency specified in ORS 183.530, the statement of fiscal impact shall also include a housing cost impact statement as described in ORS 183.534;
  - (F) If an advisory committee is not appointed under the provisions of ORS 183.333, an explanation as to why no advisory committee was used to assist the agency in drafting the rule; and
  - (G) A request for public comment on whether other options should be considered for achieving the rule's substantive goals while reducing the negative economic impact of the rule on business.
- (c) The Secretary of State may omit the information submitted under paragraph (b) of this subsection from publication in the bulletin referred to in ORS 183.360.
  - (d) When providing notice of an intended action under subsection (1)(c) of this section, the agency shall provide a copy of the rule that the agency proposes to adopt, amend or repeal, or an explanation of how the person may acquire a copy of the rule. The copy of an amended rule shall show all changes to

the rule by striking through material to be deleted and underlining all new material, or by any other method that clearly shows all new and deleted material.

- (3) (a) When an agency proposes to adopt, amend or repeal a rule, it shall give interested persons reasonable opportunity to submit data or views. Opportunity for oral hearing shall be granted upon request received from 10 persons or from an association having not less than 10 members before the earliest date that the rule could become effective after the giving of notice pursuant to subsection (1) of this section. An agency holding a hearing upon a request made under this subsection shall give notice of the hearing at least 21 days before the hearing to the person who has requested the hearing, to persons who have requested notice pursuant to subsection (8) of this section and to the persons specified in subsection (15) of this section. The agency shall publish notice of the hearing in the bulletin referred to in ORS 183.360 at least 14 days before the hearing. The agency shall consider fully any written or oral submission.
- (b) If an agency is required to conduct an oral hearing under paragraph (a) of this subsection, and the rule for which the hearing is to be conducted applies only to a limited geographical area within this state, or affects only a limited geographical area within this state, the hearing shall be conducted within the geographical area at the place most convenient for the majority of the residents within the geographical area. At least 14 days before a hearing conducted under this paragraph, the agency shall publish notice of the hearing in the bulletin referred to in ORS 183.360 and in a newspaper of general circulation published within the geographical area that is affected by the rule or to which the rule applies. If a newspaper of general circulation is not published within the geographical area that is affected by the rule or to which the rule applies, the publication shall be made in the newspaper of general circulation published closest to the geographical area.
- (c) Notwithstanding paragraph (a) of this subsection, the Department of Corrections and the State Board of Parole and Post-Prison Supervision may adopt rules limiting participation by adults in custody in the proposed adoption, amendment or repeal of any rule to written submissions.
- (d) If requested by at least five persons before the earliest date that the rule could become effective after the agency gives notice pursuant to subsection

(1) of this section, the agency shall provide a statement that identifies the objective of the rule and a statement of how the agency will subsequently determine whether the rule is in fact accomplishing that objective.

(f) An agency that receives data or views concerning proposed rules from interested persons shall maintain a record of the data or views submitted. The record shall contain:

(A) All written materials submitted to an agency in response to a notice of intent to adopt, amend or repeal a rule.

(B) A recording or summary of oral submissions received at hearings held for the purpose of receiving those submissions.

(C) Any public comment received in response to the request made under subsection (2)(b)(G) of this section and the agency's response to that comment.

(D) Any statements provided by the agency under paragraph (d) of this subsection.

(4) Upon request of an interested person received before the earliest date that the rule could become effective after the giving of notice pursuant to subsection (1) of this section, the agency shall postpone the date of its intended action no less than 21 nor more than 90 days in order to allow the requesting person an opportunity to submit data, views or arguments concerning the proposed action. Nothing in this subsection shall preclude an agency from adopting a temporary rule pursuant to subsection (5) of this section.

(5) Notwithstanding subsections (1) to (4) of this section, an agency may adopt, amend or suspend a rule without prior notice or hearing or upon any abbreviated notice and hearing that it finds practicable, if the agency prepares:

(a) A statement of its findings that its failure to act promptly will result in serious prejudice to the public interest or the interest of the parties concerned and the specific reasons for its findings of prejudice;

(b) A citation of the statutory or other legal authority relied upon and bearing upon the promulgation of the rule;

- (c) A statement of the need for the rule and a statement of how the rule is intended to meet the need;
  - (d) A list of the principal documents, reports or studies, if any, prepared by or relied upon by the agency in considering the need for and in preparing the rule, and a statement of the location at which those documents are available for public inspection; and
  - (e) For an agency specified in ORS 183.530, a housing cost impact statement as defined in ORS 183.534.
- (6)
- (a) A rule adopted, amended or suspended under subsection (5) of this section is temporary and may be effective for a period of not longer than 180 days. The adoption of a rule under this subsection does not preclude the subsequent adoption of an identical rule under subsections (1) to (4) of this section.
  - (b) A rule temporarily suspended shall regain effectiveness upon expiration of the temporary period of suspension unless the rule is repealed under subsections (1) to (4) of this section.
- (7) Notwithstanding subsections (1) to (4) of this section, an agency may amend a rule without prior notice or hearing if the amendment is solely for the purpose of:
- (a) Changing the name of an agency by reason of a name change prescribed by law;
  - (b) Changing the name of a program, office or division within an agency as long as the change in name does not have a substantive effect on the functions of the program, office or division;
  - (c) Correcting spelling;
  - (d) Correcting grammatical mistakes in a manner that does not alter the scope, application or meaning of the rule;
  - (e) Correcting statutory or rule references; or

(f) Correcting addresses or telephone numbers referred to in the rules.

(8) (a) Any person may request in writing that an agency send to the person copies of the agency's notices of intended action issued under subsection (1) of this section. The person must provide an address where the person elects to receive notices. The address provided may be a postal mailing address or, if the agency provides notice by electronic mail, may be an electronic mailing address.

(b) A request under this subsection must indicate that the person requests one of the following:

(A) The person may request that the agency mail paper copies of the proposed rule and other information required by subsection (2) of this section to the postal mailing address.

(B) If the agency posts notices of intended action on a website, the person may request that the agency mail the information required by subsection (2)(a) of this section to the postal mailing address with a reference to the website where electronic copies of the proposed rule and other information required by subsection (2) of this section are posted.

(C) The person may request that the agency electronically mail the information required by subsection (2)(a) of this section to the electronic mailing address, and either provide electronic copies of the proposed rule and other information required by subsection (2) of this section or provide a reference to a website where electronic copies of the proposed rule and other information required by subsection (2) of this section are posted.

(c) Upon receipt of any request under this subsection, the agency shall acknowledge the request, establish a mailing list and maintain a record of all mailings made pursuant to the request. Agencies may establish procedures for establishing the mailing lists and keeping the mailing lists current. Agencies by rule may establish fees necessary to defray the costs of mailings and maintenance of the lists.



(d) Members of the Legislative Assembly who receive notices under subsection (15) of this section may request that an agency furnish paper copies of the notices.

(9) This section does not apply to rules establishing an effective date for a previously effective rule or establishing a period during which a provision of a previously effective rule will apply.

(10) This section does not apply to ORS 279.835 to 279.855, 279A.140 to 279A.161, 279A.250 to 279A.290, 279A.990, 279B.050 to 279B.085, 279B.200 to 279B.240, 279B.270, 279B.275, 279B.280, 279C.360, 279C.365, 279C.370, 279C.375, 279C.380, 279C.385, 279C.500 to 279C.530, 279C.540, 279C.545, 279C.550 to 279C.570, 279C.580, 279C.585, 279C.590, 279C.600 to 279C.625, 279C.650 to 279C.670 and 279C.800 to 279C.870 relating to public contracts and purchasing.

(11) (a) Except as provided in paragraph (c) of this subsection, a rule is not valid unless adopted in substantial compliance with the provisions of this section in effect on the date that the notice required under subsection (1) of this section is delivered to the Secretary of State for the purpose of publication in the bulletin referred to in ORS 183.360.

(b) In addition to all other requirements with which rule adoptions must comply, a rule other than a rule amended for a purpose described in subsection (7) of this section is not valid if the rule has not been submitted to the Legislative Counsel in the manner required by ORS 183.355 and 183.715.

(c) A rule is not subject to judicial review or other challenge by reason of failing to comply with subsection (2)(a)(A) of this section.

(12) (a) Notwithstanding the provisions of subsection (11) of this section, but subject to paragraph (b) of this subsection, an agency may correct its failure to substantially comply with the requirements of subsections (2) and (5) of this section in adoption of a rule by an amended filing, as long as the noncompliance did not substantially prejudice the interests of persons to be affected by the rule.

(b) An agency may use an amended filing to correct a failure to include a fiscal impact statement in a notice of intended action, as required by subsection

(2)(b)(E) of this section, or to correct an inaccurate fiscal impact statement, only if the agency developed the fiscal impact statement with the assistance of an advisory committee or fiscal impact advisory committee appointed under ORS 183.333.

(13) Unless otherwise provided by statute, the adoption, amendment or repeal of a rule by an agency need not be based upon or supported by an evidentiary record.

(14) When an agency has established a deadline for comment on a proposed rule under the provisions of subsection (3)(a) of this section, the agency may not extend that deadline for another agency or person unless the extension applies equally to all interested agencies and persons. An agency shall not consider any submission made by another agency after the final deadline has passed.

(15) The notices required under subsections (1) and (3) of this section must be given by the agency to the following persons:

(a) If the proposed adoption, amendment or repeal results from legislation that was passed within two years before notice is given under subsection (1) of this section, notice shall be given to the legislator who introduced the bill that subsequently was enacted into law, and to the chair or cochairs of all committees that reported the bill out, except for those committees whose sole action on the bill was referral to another committee.

(b) If the proposed adoption, amendment or repeal does not result from legislation that was passed within two years before notice is given under subsection (1) of this section, notice shall be given to the chair or cochairs of any interim or session committee with authority over the subject matter of the rule.

(c) If notice cannot be given under paragraph (a) or (b) of this subsection, notice shall be given to the Speaker of the House of Representatives and to the President of the Senate who are in office on the date the notice is given.

(16) (a) Upon the request of a member of the Legislative Assembly or of a person who would be affected by a proposed adoption, amendment or repeal, the committees receiving notice under subsection (15) of this section shall review the proposed adoption, amendment or repeal for compliance with

the legislation from which the proposed adoption, amendment or repeal results.

- (b) The committees shall submit their comments on the proposed adoption, amendment or repeal to the agency proposing the adoption, amendment or repeal.

**ORS 183.355 – Filing and taking effect of rules**

(1) The Secretary of State shall by rule prescribe requirements for the manner and form for filing rules adopted, amended or repealed by agencies. The Secretary of State may refuse to accept for filing any rules that do not comply with the requirements.

(2)(a) Each agency shall file with the office of the Secretary of State each rule adopted by the agency.

(b) Unless otherwise provided by rule adopted by the Secretary of State, an agency adopting a rule incorporating published standards by reference is not required to file a copy of those standards with the Secretary of State if:

(A) The standards adopted are unusually voluminous and costly to reproduce; and

(B) The rule filed with the Secretary of State identifies the location of the standards so incorporated and the conditions of their availability to the public.

(3) Each rule is effective upon filing as required by subsection (2) of this section, except that:

(a) If a later effective date is required by statute or specified in the rule, the later date is the effective date.

(b) A temporary rule becomes effective upon filing with the Secretary of State, or at a designated later date, only if the statement required by ORS 183.335 (Notice) (5) is filed with the rule. The agency shall take appropriate measures to make temporary rules known to the persons who may be affected by them.

- (4) When a rule is amended or repealed by an agency, the agency shall file the amendment or notice of repeal with the Secretary of State.
- (5) A certified copy of each executive order issued, prescribed or promulgated by the Governor shall be filed in the office of the Secretary of State.
- (6) A rule is not valid or effective against any person or party until the rule is filed in accordance with this section. However, if an agency, in disposing of a contested case, announces in its decision the adoption of a general policy applicable to the case and subsequent cases of like nature the agency may rely upon the decision in disposition of later cases.
- (7) The Secretary of State shall, upon request, supply copies of rules, or orders or designated parts of rules or orders, in the format requested, making and collecting therefor fees prescribed by ORS 177.130 (Fees of the Secretary of State). All receipts from the sale of copies shall be deposited in the State Treasury to the credit of the Secretary of State Miscellaneous Receipts Account established under ORS 279A.290 (Miscellaneous receipts accounts).
- (8) The Secretary of State shall establish and collect fees from agencies filing rules under this section. The fees shall be established in amounts calculated to be necessary to generate revenues adequate to pay costs incurred by the Secretary of State in performing the following duties that are not paid for by subscriber fees or other fees prescribed by law:
- (a) Publication of the compilation referred to in ORS 183.360 (Publication of rules and orders) (1);
  - (b) Electronic publication of the bulletin referred to in ORS 183.360 (Publication of rules and orders) (3); and
  - (c) Electronic publication of rules and other information relating to rules under ORS 183.365 (Publication of administrative rules in electronic form).
- (9) All fees collected under subsection (8) of this section shall be deposited in the State Treasury to the credit of the Secretary of State Miscellaneous Receipts Account established under ORS 279A.290 (Miscellaneous receipts accounts).

(10) No later than 10 days after an agency files an adopted, amended or repealed rule with the Secretary of State, other than a rule amended for a purpose described in ORS 183.335 (Notice) (7), the Secretary of State shall:

- (a) Electronically transmit the rule to the Legislative Counsel in accordance with ORS 183.715 (Submission of adopted rule to Legislative Counsel required); and
- (b) Provide to the agency that filed the rule a written confirmation that the rule was transmitted to the Legislative Counsel.

**ORS 468.015 – Functions of commission**

It is the function of the Environmental Quality Commission to establish the policies for the operation of the Department of Environmental Quality in a manner consistent with the policies and purposes of ORS 448.305 (Special ordinance authority of certain cities), 454.010 (Definitions for ORS 454.010 to 454.040) to 454.040 (Determination of costs payable by users), 454.205 (Municipality defined), to 454.255 (Plans and cost estimates), 454.505 (Definitions for ORS 454.505 to 454.535) to 454.535 (Sewage Treatment Works Construction Account), 454.605 (Definitions for ORS 454.605 to 454.755) to 454.755 (Fees for certain reports on sewage disposal) and ORS chapters 467, 468A and 468B. In addition, the commission shall perform any other duty vested in it by law.

**ORS 468.020 – Rules and standards**

(1) In accordance with the applicable provisions of ORS chapter 183, the Environmental Quality Commission shall adopt such rules and standards as it considers necessary and proper in performing the functions vested by law in the commission.

(2) Except as provided in ORS 183.335 (Notice) (5), the commission shall cause a public hearing to be held on any proposed rule or standard prior to its adoption. The hearing may be before the commission, any designated member thereof or any person designated by and acting for the commission.

**ORS 468.035 – Functions of department**

(1) Subject to policy direction by the Environmental Quality Commission, the Department of Environmental Quality:

- (a) Shall encourage voluntary cooperation by the people, municipalities, counties, industries, agriculture, and other pursuits, in restoring and preserving the quality and purity of the air and the waters of the state in accordance with rules and standards established by the commission.
- (b) May conduct and prepare, independently or in cooperation with others, studies, investigations, research and programs pertaining to the quality and purity of the air or the waters of the state and to the treatment and disposal of wastes.
- (c) Shall advise, consult, and cooperate with other agencies of the state, political subdivisions, other states or the federal government, in respect to any proceedings and all matters pertaining to control of air or water pollution or for the formation and submission to the legislature of interstate pollution control compacts or agreements.
- (d) May employ personnel, including specialists and consultants, purchase materials and supplies, and enter into contracts necessary to carry out the purposes set forth in ORS 448.305 (Special ordinance authority of certain cities), 454.010 (Definitions for ORS 454.010 to 454.040) to 454.040 (Determination of costs payable by users), 454.205 (Municipality defined) to 454.255 (Plans and cost estimates), 454.505 (Definitions for ORS 454.505 to 454.535) to 454.535 (Sewage Treatment Works Construction Account), 454.605 (Definitions for ORS 454.605 to 454.755) to 454.755 (Fees for certain reports on sewage disposal) and ORS chapters 468, 468A and 468B.
- (e) Shall conduct and supervise programs of air and water pollution control education, including the preparation and distribution of information regarding air and water pollution sources and control.
- (f) Shall provide advisory technical consultation and services to units of local government and to state agencies.
- (g) Shall develop and conduct demonstration programs in cooperation with units of local government.
- (h) Shall serve as the agency of the state for receipt of moneys from the federal government or other public or private agencies for the purposes of air and

water pollution control, studies or research and to expend moneys after appropriation thereof for the purposes given.

(i) Shall make such determination of priority of air or water pollution control projects as may be necessary under terms of statutes enacted by the Congress of the United States.

(j) Shall seek enforcement of the air and water pollution laws of the state.

(k) Shall institute or cause to be instituted in a court of competent jurisdiction, proceedings to compel compliance with any rule or standard adopted or any order or permit, or condition thereof, issued pursuant to ORS 448.305 (Special ordinance authority of certain cities), 454.010 (Definitions for ORS 454.010 to 454.040) to 454.040 (Determination of costs payable by users), 454.205 (Municipality defined) to 454.255 (Plans and cost estimates), 454.505 (Definitions for ORS 454.505 to 454.535) to 454.535 (Sewage Treatment Works Construction Account), 454.605 (Definitions for ORS 454.605 to 454.755) to 454.755 (Fees for certain reports on sewage disposal) and ORS chapters 468, 468A and 468B.

(l) Shall encourage the formulation and execution of plans in conjunction with air and water pollution control agencies or with associations of counties, cities, industries and other persons who severally or jointly are or may be the source of air or water pollution, for the prevention and abatement of pollution.

(m) May determine, by means of field studies and sampling, the degree of air or water pollution in various regions of the state.

(n) May perform such other and further acts as may be necessary, proper or desirable to carry out effectively the duties, powers and responsibilities of the department as set forth in ORS 448.305 (Special ordinance authority of certain cities), 454.010 (Definitions for ORS 454.010 to 454.040) to 454.040 (Determination of costs payable by users), 454.205 (Municipality defined) to 454.255 (Plans and cost estimates), 454.505 (Definitions for ORS 454.505 to 454.535) to 454.535 (Sewage Treatment Works Construction Account), 454.605 (Definitions for ORS 454.605 to 454.755) to 454.755 (Fees for certain reports on sewage disposal) and ORS chapters 468, 468A and 468B.

(o) Shall coordinate any activities of the department related to a watershed enhancement project approved by the Oregon Watershed Enhancement Board under ORS 541.932 (Watershed enhancement project assistance) with activities of other cooperating state and federal agencies participating in the project.

**ORS 468B.015 – Policy**

Whereas pollution of the waters of the state constitutes a menace to public health and welfare, creates public nuisances, is harmful to wildlife, fish and aquatic life and impairs domestic, agricultural, industrial, recreational and other legitimate beneficial uses of water, and whereas the problem of water pollution in this state is closely related to the problem of water pollution in adjoining states, it is hereby declared to be the public policy of the state:

- (1) To conserve the waters of the state through innovative approaches, including but not limited to the appropriate reuse of water and wastes;
- (2) To protect, maintain and improve the quality of the waters of the state for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, municipal, recreational and other legitimate beneficial uses;
- (3) To provide that no waste be discharged into any waters of this state without first receiving the necessary treatment or other corrective action to protect the legitimate beneficial uses of such waters;
- (4) To provide for the prevention, abatement and control of new or existing water pollution; and
- (5) To cooperate with other agencies of the state, agencies of other states and the federal government in carrying out these objectives.



## Oregon Administrative Rules

### **OAR 137-001 – Model Rules for Rulemaking**

#### **-0011 – Permanent Rulemaking Notice**

(1) The agency will give notice of proposed permanent rulemaking to those listed in the rule adopted under ORS 183.341(4) and to legislators specified by 183.335(15) by mailing, electronic mailing, or personally delivering a copy of the rule or rules as proposed and a copy of the notice required under 183.335(2). In lieu of providing a copy of the rule or rules as proposed, the agency may describe the subject matter of the rule or rules and state how and where a copy may be obtained on paper, via electronic mail, or from a specified web site. If the agency posts the rule or rules on a web site, the agency must provide a web address or link sufficient to enable a person to find the rules easily. Failure to provide a web address or link shall not affect the validity of any rule.

(2) Persons who have asked the agency to send notices of proposed rulemaking to them pursuant to ORS 183.335(8) may choose to receive copies of the proposed rule or rules and notice required under 183.335(2) by mail.

(3) If the agency offers it, persons who have asked the agency to send notices of proposed rulemaking to them pursuant to ORS 183.335(8) may choose to receive:

(a) An abbreviated form of mailed notice containing the caption, summary, and information about how to comment, required by ORS 183.335(2)(a), accompanied by a reference to a web site where copies of the proposed rule or rules and other information required by 183.335(2) are posted or

(b) Notice by electronic mail that either contains the proposed rule or rules and the notice required under ORS 183.335(2) as attachments or provides a reference to a web site where the notice and the rule(s) are posted.

#### **-0040 – Rulemaking Record**

(1) The agency shall maintain a record of any data or views it receives in response to a notice of intent to adopt, amend, or repeal a rule.

(2) If a hearing is held, the agency may require the presiding officer, within a reasonable time after the hearing, to provide the agency a written summary of statements given

and exhibits received and a report of the officer's observations of physical experiments, demonstrations, or exhibits. The presiding officer may make recommendations but such recommendations are not binding upon the agency.

(3) The rulemaking record shall be maintained by the rules coordinator. The agency shall make the rulemaking record available to members of the public upon request.

(4) The rulemaking record will include:

- (a) The presiding officer's summary of or a recording of oral submissions received at the hearing, and the presiding officer's recommendation, if any;
- (b) Any written comments received in response to the notice of rulemaking;
- (c) The recommendations of an advisory committee or fiscal impact advisory committee, if any, appointed under ORS 183.333;
- (d) The agency's statements of the objective of the rule, including how the agency will evaluate whether the rule accomplishes the objective, when required by ORS 183.335(3)(d);
- (e) Any public comment received in response to the request for comments made pursuant to ORS 183.335(2)(b)(G);
- (f) The notice of the agency's intended action, required by ORS 183.335(1) and (2); and
- (g) A copy of the filing with the Secretary of State, required by ORS 183.355(1) or (3).

**-0050 - Agency Rulemaking Action**

At the conclusion of the hearing, or after receipt of the presiding officer's requested report and recommendation, if any, the agency may adopt, amend, or repeal rules covered by the notice of intended action. The agency shall fully consider all written and oral submissions.

**-0060 – Secretary of State Rule Filing**

(1) The agency shall file in the office of the Secretary of State a certified copy of each adopted or amended rule and each order repealing an agency rule.

(2) The rule or order shall be effective upon filing with the Secretary of State unless a different effective date is required by statute or specified in the rule or order.

**OAR 340-041 – Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon**

**-0001 – Preface**

(1) The rules that follow, together with the applicable laws of the State of Oregon and the applicable regulations of the Environmental Quality Commission (the Commission), set forth Oregon’s plans for management of the quality of public waters within the State of Oregon.

(2) Under this plan, the Department of Environmental Quality will continue to manage water quality by evaluating discharges and activities, whether existing or a new proposal, on a case-by-case basis, based on best information currently available and within the limiting framework of minimum standards, treatment criteria and policies which are set forth in the plan.

...

**-0004 – Antidegradation**

(1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 through 340-041-0350 supplement the Antidegradation Policy.

...

**-0007 – Statewide Narrative Criteria**

(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

...

**-0016 – Dissolved Oxygen**

(1) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), the following criteria apply during the applicable spawning through fry emergence periods set forth in the tables and figures and, where resident trout spawning occurs, during the time trout spawning through fry emergence occurs:

(a) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(b) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation;

(c) The spatial median intergravel dissolved oxygen concentration must not fall below 8.0 mg/l.

...

## **EXHIBIT B**

Deschutes River Alliance Petition for Reconsideration,  
Department of Justice Response,  
and  
Deschutes River Alliance Petition for Policy Direction

October 13, 2020

Justin Green  
Water Quality Division Administrator  
Oregon Dept. of Environmental Quality  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

RE: Petition for Reconsideration, Pollution Complaint # 20-2069

Dear Administrator Green,

Attached, please find a Petition for Reconsideration from the Deschutes River Alliance (DRA), regarding the Oregon Department of Environmental Quality's (DEQ) September 8, 2020 final order closing pollution complaint # 20-2069.

This Petition is brought pursuant to OAR 137-004-0080, under which a person entitled to judicial review under ORS 183.484 of a final order in other than a contested case may file a petition for reconsideration of that final order with the agency. Petitioner requests that DEQ reconsider its decision to close the pollution complaint and proceed without further delay to enforce the dissolved oxygen criteria as required by OAR 340-041-0016(1).

Sincerely,

Ben Kirsch  
Staff Attorney  
Deschutes River Alliance  
5331 S Macadam Ave., Suite 330  
Portland, OR 97239  
ben@deschutesriveralliance.org

cc:

Richard Whitman, Director DEQ  
Eric Nigg, Eastern Region Water Quality Manager DEQ  
Anika Marriott, Oregon Department of Justice

**STATE OF OREGON  
BEFORE THE DEPARTMENT OF ENVIRONMENTAL QUALITY**

<b>IN THE MATTER OF:</b>	)	
	)	<b>PETITION FOR RECONSIDERATION</b>
	)	<b>PURSUANT TO OAR 137-004-0080 BY:</b>
<b>Pollution Compliant # 20-2069</b>	)	
	)	<b>Deschutes River Alliance,</b>
	)	<i>Petitioner.</i>
	)	

**I. Introduction**

Petitioner Deschutes River Alliance (DRA) respectfully requests that the Oregon Department of Environmental Quality (DEQ) reconsider its final order closing pollution complaint # 20-2069. By its September 8 email communication to DRA, DEQ stated that it had closed complaint # 20-2069. In that communication, DEQ erroneously interpreted the unambiguous requirements of OAR 340-041-0016(1)(a). Its decision thereby violated the state mandate to manage water quality so as to protect fish in the Deschutes Basin.

This Petition for Reconsideration is brought pursuant to ORS §§ 183.480, 183.484, and OAR 137-004-0080, authorizing appeals of final agency orders in other than contested cases by any person who is adversely affected or aggrieved. As provided in OAR 137-004-0080, a person entitled to judicial review under ORS § 183.484 of a final order in other than a contested case may file a petition for reconsideration of that final order with the agency within 60 calendar days after the date of the order.

**II. Nature of the Petitioner's Interest**

Petitioner Deschutes River Alliance is a 501(c)(3) non-profit Oregon corporation with its principal place of business located in Deschutes County, Oregon. DRA is a science-based advocacy organization seeking collaborative solutions to basin-wide threats to the health of the Deschutes River and its tributaries. We advocate for water quality, a healthy ecosystem, and for the establishment and protection of robust populations of resident and anadromous fish throughout the river's entire watershed.

DRA and its supporters are adversely affected and aggrieved by DEQ's final order concerning pollution complaint # 20-2069. DRA's supporters include individuals

and businesses who recreate and rely on the LDR and its residential trout. As such, the DRA and its supporters rely on effective regulation and management of the lower Deschutes River and its reliant species. DEQ's final order concerning pollution complaint # 20-2069 also injures DRA's organizational goals. Therefore, OAR 137-004-0080 authorizes DRA to file the instant petition for reconsideration with DEQ on behalf of itself and its supporters. DRA here elects at this time to petition for reconsideration of the DEQ decision rather than to seek judicial review, both to afford the Department a second opportunity to consider the matter as well as to conserve judicial, agency, and organizational resources.

Pursuant to OAR 137-004-0080(1), petitions for reconsideration must be filed within 60 calendar days of the subject final order. DEQ issued its final order concerning pollution complaint # 20-2069 on September 8, 2020. Accordingly, this filing is timely.

### **III. Factual Background**

On August 1, 2020, three members of the DRA science team observed a resident trout pair immediately adjacent to a freshly cleared redd during routine maintenance of DRA water-quality monitoring equipment near lower Deschutes River-mile 99. Those members photographed the trout pair and adjacent redd. DEQ is aware that the Oregon Department of Fish and Wildlife (ODFW) deems these to be credible indications of spawning activity.<sup>1</sup>

Based on DRA water quality data from this same location, DO levels were insufficient for spawning resident trout and their emerging fry.<sup>2</sup> From July 1 to September 19, DO levels regularly fell below 9.0 mg/l - falling as low as 7.13 mg/l.<sup>3</sup> Our data is consistent with the previous nine years of PGE-reported water quality data for mid-July through the end of September. In response to these most recent indications of spawning activity and the insufficient DO levels in the river, DRA filed a pollution complaint concerning the DO levels in the LDR on August 14, 2020. *See Attachment A to this petition.*

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<sup>1</sup> Conversation between Eric Nigg, DEQ, and Ben Kirsch, DRA, regarding the intended DEQ action on Pollution Complaint # 20-2069. September 1, 2020. We note that ODFW consults with DEQ, among other state agencies, providing technical advice and recommendations on, among other topics, regulatory implementation. ORS § 496.164.

<sup>2</sup> See Attachment D – 2020 Dissolved Oxygen Levels.

<sup>3</sup> DRA's hourly DO data is available upon request.



#### IV. Legal Background

Pursuant to ORS § 183.480, any person adversely affected or aggrieved by a final agency order is entitled to judicial review of that order. DEQ's regulations provide that any person entitled to judicial review "may file a petition for reconsideration of a final order in other than a contested case with the agency within 60 calendar days after the date of the order."<sup>4</sup>

DEQ's water quality management requirements are found in OAR 340-041. In relation to dissolved oxygen, "where trout spawning occurs, during the time trout spawning through fry emergence occurs...the dissolved oxygen levels may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen...is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l."<sup>5</sup> In addition, DEQ is directed to "continue to manage water quality...based on best information currently available."<sup>6</sup>

#### V. Grounds for Reconsideration

DEQ's deviation from the applicable regulatory requirements justifies DRA's request for reconsideration. In its September 8, 2020 email communication, DEQ Eastern Region Water Quality Manager Eric Nigg informed DRA that DEQ had "closed the complaint." See Attachment B. The September 8 email also specified that DEQ "implements the dissolved oxygen criteria based on the guidance we provided to EPA in support of their approval of our dissolved oxygen standards."<sup>7</sup> The Sept. 8 DEQ email to DRA also stated that the "currently designated peak period of resident trout spawning for this reach of the Deschutes is from April 15 through June 15."<sup>8</sup>

These justifications sharply deviate from the clear mandate of the governing water quality standards. First, the state water quality standards provide criteria for Dissolved Oxygen that plainly require a higher level of DO. DEQ's September 8 final order closing complaint # 20-2069 amounts to a refusal to implement the required DO criterion in the face of DRA's clear evidence of August 1 resident trout spawning activity. To comply with the regulatory requirements, DO levels must be at least 9.0 mg/l "during the time trout spawning through fry emergence occur." The regulations

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<sup>4</sup> OAR 340-041-0080(1).

<sup>5</sup> OAR 340-041-0016(1)(a).

<sup>6</sup> OAR 340-041-0001(2).

<sup>7</sup> Email from Eric Nigg, DEQ, to Ben Kirsch, DRA, titled "DRA complaint response." September 8, 2020.

<sup>8</sup> *Ibid.*

do not contemplate any exceptions to this mandate. And unlike other species of fish noted earlier in OAR 340-041-0016(1)(a), the trout spawning minimum DO requirement is not tied to specifically identified spawning periods. Nor is it required only during “designated peaks.” Instead, the trout spawning DO criterion applies *when* trout actually spawn and continues through fry emergence. That is, the legal standard set out in the OAR is directly tied to actual spawning activity in the river. DEQ’s denial of DRA’s pollution complaint is therefore not in accordance with law, and is not supported by substantial evidence inasmuch as DEQ’s denial is in direct contradiction of the evidence submitted to DEQ by DRA.

Second, DEQ ignores its requirement to use the best information that is currently available about trout spawning behavior. Rather, DEQ relies on “guidance [it] provided to EPA in support of [EPA] approval of [DEQ’s] dissolved oxygen standards.”<sup>9</sup> Based on public records requests, the guidance cited by DEQ appears to be a 2004 letter from DEQ to EPA describing DEQ-“deemed” statewide trout spawning periods prompted by “a lack of site specific data.”<sup>10</sup> See Attachment C to this petition.

As noted above, the minimum DO levels required by the applicable OAR are based on factual conditions in the river. The 2004 DEQ letter of course cannot waive these clear legal requirements, *i.e.*, a letter cannot relax the law as set out in a regulation promulgated via notice-and-comment rulemaking.

Furthermore, even if a letter could somehow legally trump a regulation, the premise of the relevant passage of the letter is “a lack of site specific data.” DRA’s complaint here is based on recent site-specific data, not a lack thereof.

Additionally, the resident trout portion of the OAR as it exists today was not promulgated until 2007 (years after the 2004 letter). Further, EPA never approved DEQ’s February 4, 2004 DO formulation.<sup>11</sup> Moreover, even if that formulation retained some validity in 2004, it is superseded by the present OAR 340-041-0016(1)(a).

DRA’s pollution complaint establishes that resident trout actually spawn well after June 15. The plain language of OAR 340-041-0016(1)(a) does not allow DEQ to ignore the information submitted to DEQ in DRA’s pollution complaint.

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<sup>9</sup> *Ibid.*

<sup>10</sup> Letter from Michael T. Llewelyn, DEQ, to Randy Smith, EPA, Re: Oregon Responses to EPA Questions re the State’s water quality temperature standards. February 4, 2004. At page 3.

<sup>11</sup> EPA “Supporting Documents for EPA’s Action Reviewing New or Revised Water Quality Standards for the State of Oregon.” March 2, 2004. At page 44.

## **VI. Conclusion**

On the basis of the above, DRA requests that DEQ reconsider its final order concerning Pollution Complaint # 20-2069.

Attachment A  
Relevant Portions of DRA Pollution Complaint # 20-2069

On August 1st of this year (2020), three members of the Deschutes River Alliance were completing a field audit of DRA's continuous water monitoring equipment in the Deschutes River at the location specified in this complaint. While present, they observed freshly made salmonid redds in the area. In addition, paired trout were observed in apparent spawning behavior over one of the redds (photos available).

OAR 340-041-0016(1) requires that "where resident trout spawning occurs," dissolved oxygen must be above 11.0 mg/l, unless intergravel dissolved oxygen is high enough to allow the lower 9.0 mg/l level. This requirement applies from "spawning through fry emergence." Based on its August 1 observations, DRA conservatively estimates a fry emergence date of September 20 for these redds.

Section 3.6 of the July, 2004 Pelton Round Butte Project Water Quality Management Plan requires that Portland General Electric "will institute controlled spills at the Reregulating Dam" to maintain sufficient DO concentrations for spawning and incubation.

The DRA has collected hourly dissolved oxygen data from this location from March/April through Oct/Nov every year beginning in 2015. In each year, the DO levels fell below 9.0 mg/l for most days in July, August, and September of 2015 through 2019. This is also supported by the dam operator's self-reported data between 2012 and 2019. DRA data are still being collected this year, but we expect this year to be no different, as upstream operations and river conditions have not changed.

DEQ's application of the non-spawning criterion to Project discharges below the Reregulation Dam between June 16 and October 14, 2020 via the current "Section 401 Interim Agreement for the Pelton Round Butte Hydroelectric Project" is not in accordance with the recent factual evidence of resident trout redds described above. OAR 340-041-0001(2) provides that DEQ will manage water quality "based on best information currently available."

#### Location of Observed Spawning



Observed Spawning Activity



Attachment B  
DEQ Final Order on DRA Pollution Complaint



Ben Kirsch <ben@deschutesriveralliance.org>

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## DRA complaint response

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**NIGG Eric** <Eric.Nigg@state.or.us>

Tue, Sep 8, 2020 at 9:00 AM

To: "ben@deschutesriveralliance.org" <ben@deschutesriveralliance.org>

Cc: DOU Connie <Connie.Dou@state.or.us>, STURDEVANT Debra <Debra.STURDEVANT@state.or.us>, WIGAL Jennifer <Jennifer.WIGAL@state.or.us>

Hi, Ben.

I'm writing to recall the conversation we had on Tuesday, September 1st regarding the complaint you filed about dissolved oxygen concentrations in the Lower Deschutes River with respect to resident trout spawning. DRA members have recently seen resident trout spawning later than the period designated by DEQ for implementing our dissolved oxygen criteria, though you may not have documentation of this in prior years (since 2015) at the same location. We discussed the following in our conversation:

- DEQ implements the dissolved oxygen criteria based on the guidance we provided to EPA in support of their approval of our dissolved oxygen standards,
- The currently designated peak period of resident trout spawning for this reach of the Deschutes is from April 15 through June 15,
- We are interested in their observations and have consulted with ODFW for their perspective on resident trout use
- Rule changes or compelling information on beneficial uses are not implemented in permits until the next revision of the permit,
- DEQ will be revisiting beneficial use designations with expected rulemaking presented to EQC in Spring of 2022,
- We will notify DRA if there is a call for data for this rulemaking,
- DEQ has closed this complaint.

Thanks for the information and please feel free to call or write with additional questions or observations.

Eric Nigg

Eastern Region Water Quality Manager

Oregon Department of Environmental Quality

475 NE Bellevue Dr., Bend, OR 97701

541-633-2035



Attachment C  
2004 DEQ letter to EPA



# Oregon

Theodore R. Kulongoski, Governor

## Department of Environmental Quality

811 SW Sixth Avenue  
Portland, OR 97204-1390  
503-229-5696  
TTY 503-229-6993

February 4, 2004

Mr. Randy Smith, Director  
Office of Water  
U.S. EPA Region 10  
1200 Sixth Avenue  
Seattle, WA 98101

Re: Oregon Responses to EPA Questions re the State's water quality temperature standards

Dear Mr. Smith:

This letter is a follow up to our similar correspondence of December 19, 2003, which described Oregon's newly adopted antidegradation and temperature rules. There are three purposes for this letter. First, we are offering similar clarifications regarding the State's intended methodology for identifying natural conditions for parameters other than temperature. Second, we are commenting on several proposed conservation measures EPA is developing pursuant to consultation under the Endangered Species Act. Finally, we are providing your Agency with information on the application of the dissolved oxygen criteria to resident fish spawning.

### Natural Conditions

As we indicated in our earlier letter, our revised rules make it clear that where DEQ identifies a natural condition which is less stringent than the numeric criteria set out in the State's water quality standards, the natural condition supercedes the numeric criteria. Very similar language appeared in our previous rules, which were previously approved by EPA.

By definition, "natural conditions" are those pollutants that are present in the State's waters that are not attributable to anthropogenic activities. Rather, these conditions are caused by local geophysical, hydrological and meteorological processes and wildlife. DEQ anticipates that site-specific natural conditions might be identified for the following parameters:

- Bacteria (attributed to wildlife)
- Metals (attributed to naturally eroding ore deposits)
- Nutrients (attributed to background soil, vegetation and/or wildlife conditions)
- Sediments and Turbidity (attributed to soil erosion and/or organic matter not accelerated by human activities)

Item A 000058



Randy Smith letter  
February 4, 2004

- Other parameters attributed to similar natural processes.

Prior to a natural condition superceding otherwise applicable numeric criteria, DEQ will make a finding as to the level at which the pollutant is present with no influence from anthropogenic activities. Similarly, DEQ will document the natural process contributing to the presence of the pollutant. The specific methodology used to support a natural condition finding may vary in each local situation. However, in general the methodologies used will be similar to that described in our December 19, 2003 letter:

- Reference streams,
- Pollutant transport models,
- DNA testing,
- Historical data (where available) and/or
- Other sampling methods and studies.

The public will have specific notice of these natural conditions whenever they are relevant to one of the Clean Water Act regulatory programs. The public notices and documentation accompanying the biannual 303(d) listing process, draft TMDLs, draft NPDES permits and 401 water quality certifications will indicate that the otherwise applicable numeric criteria have been superceded by a natural conditions finding. Moreover, since 303(d) listings and TMDLs are transmitted to EPA for approval, the Agency will have an opportunity to review DEQ's natural conditions conclusions. DEQ is committed to work with EPA as natural condition methodologies are refined in the TMDL, NPDES and 303(d) listing contexts.

DEQ expects that natural conditions will most commonly be identified through the TMDL process. In that circumstance, EPA will have an opportunity to review and evaluate any natural condition determination as part of its TMDL approval action. DEQ will list the water bodies where "natural conditions" findings have been made on our standards web page to ensure that the public is aware and notified of natural conditions,

It should be noted that it is possible, at some locations in the State, that the natural condition will not support, and never has supported a designated beneficial use. In such circumstances, DEQ will modify the designated use to properly adjust the beneficial use to better reflect the existing use of the water segment.

#### Proposed Conservation Measures

DEQ is aware that EPA is considering several conservation measures associated with its approval of the State water quality standards revisions. EPA has inquired whether DEQ would participate in these conservation measures if they are pursued. To begin with, DEQ notes that most of these conservation measures pursue information on the future *implementation* of the State's standards. They are best categorized as efforts intended to identify additional information supporting the use of our standards once they are in place.

Since Oregon has a strong interest in these federal initiatives, DEQ will, resources allowing, participate in the proposed conservation measures as described in EPA's Biological Evaluation: Temperature Monitoring and Use Designations.(2.5.1) and the Two Year Review (2.5.2).

#### Dissolved Oxygen and Spawning

The revised Oregon rules clarified spawning locations and timing for anadromous fish and Lahontan Cutthroat Trout. Due to a lack of site specific data for species other than these, and since temperature criteria for spawning were not established for other species, no similar clarification was made for resident trout (i.e., rainbow, redband, Westslope cutthroat and coastal cutthroat) or char (bull trout) spawning. However, the dissolved oxygen criteria contain provisions that continue to apply to resident trout and char spawning areas. DEQ will use the following dates to apply the dissolved oxygen spawning criteria (throughout the range where the Oregon maps indicate trout rearing, redband trout and core cold water habitat uses are identified).

#### Resident Trout Spawning (Redband, Rainbow, Westslope and Coastal Cutthroat)

- *For waters designated as trout rearing, or redband trout use, spawning is deemed to occur from January 1 – May 15 each year;*
- *For waters designated as core cold water habitat, or bull trout spawning and rearing use, resident trout spawning is deemed to occur from January 1 – June 15 each year; and*
- *For trout rearing waters upstream from core cold water habitat, spawning is also deemed to occur from January 1 – June 15 each year.*

#### Char (Bull Trout) Spawning

The following dates apply to all reaches designated as having “bull trout spawning and rearing use” within the specified basin or subbasin:

<u>Basin</u>	<u>Subbasin</u>	<u>Spawning Period</u>	<u>Source of Information</u>
South Willamette		Aug 15 – May 30	ODFW
John Day		Sept 1 – April 30	ODFW
Umatilla		Sept 1 – April 30	ODFW

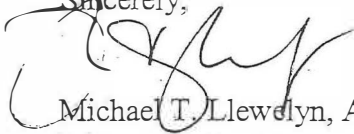
Randy Smith letter  
February 4, 2004

Walla Walla		Sept 1 – April 30	ODFW
Grand Ronde	Upper G. R.	Sept 1 – April 15	ODFW
	Wallowa	Sept 1 – May 15	ODFW
	Wenaha	Aug 15 – March 31	ODFW
Imnaha		Aug 15 – May 31	ODFW
Hood		Aug 15 – May 15	USFWS
Deschutes		Aug 15 – May 15	USFWS
Powder		Aug 15 – May 15	USFWS
Malheur		Aug 15 – May 30	USFWS
Klamath		Aug 15 - May 30	USFWS

This timing information will be circulated to DEQ field staff responsible for implementing the dissolved oxygen criteria. DEQ will continue to refine all of these designations as more information is developed on resident trout and char spawning activities.

Oregon looks forward to EPA's review and approval of our water quality standards. If you require any additional information or clarification of these rules, please contact me or have your staff call Mark Charles, water quality standards manager at (503) 229-5589.

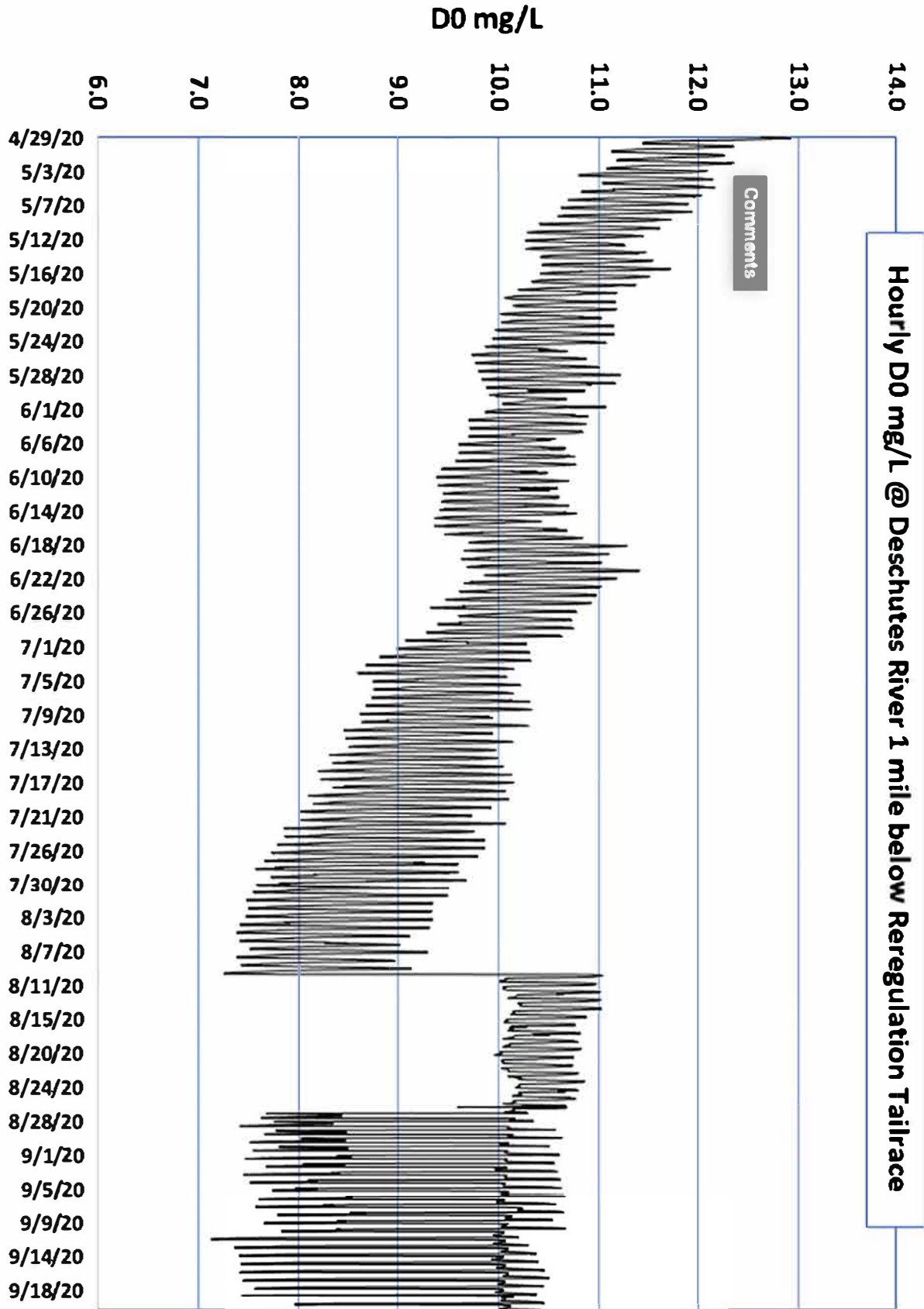
Sincerely,



Michael T. Llewellyn, Administrator  
Water Quality Program

Cc: Stephanie Hallock - DEQ  
Mark Charles - DEQ  
Paula van Haagen - EPA  
Mary Lou Soscia - EPA

Attachment D  
2020 Dissolved Oxygen Level





**DEPARTMENT OF JUSTICE**  
GENERAL COUNSEL DIVISION

December 10, 2020

**VIA ELECTRONIC MAIL ONLY**

Ben Kirsch  
Staff Attorney  
Deschutes River Alliance  
5331 S Macadam Avenue, Suite 330  
Portland, OR 97239  
[ben@deschutesriveralliance.org](mailto:ben@deschutesriveralliance.org)

Re: Petition for Reconsideration, Pollution Complaint # 20-2069  
DOJ File No. 340310-GN0254-20

Dear Mr. Kirsch,

I am writing in response to your petition filed October 13, 2020 (Petition) on behalf of the Department of Environmental Quality (DEQ). The Petition seeks reconsideration of an email written by Mr. Eric Nigg, Eastern Region Water Quality Manager, on September 8, 2020, in response to a complaint filed by you on behalf of Deschutes River Alliance (DRA). The email that is the subject of your petition is not a final agency order subject to reconsideration or judicial review under ORS 183.484 or OAR 137-004-0080.

The Oregon Administrative Procedures Act (APA) defines “order” as “any agency action expressed orally or in writing directed to a named person or persons, other than employees, officers or members of any agency.” ORS 183.310(2). The statute further provides that “‘Final order’ does not include any tentative or preliminary declaration or statement that (A) Precedes final agency action, or (B) Does not preclude further agency subject matter of the statement or declaration.” ORS 183.310(6)(b).

Rather than expressing a final agency action, Mr. Nigg’s email provided notice of future agency action regarding the issue raised in the complaint. Mr. Nigg’s email acknowledged DRA’s submittal which stated that DRA members had recently seen resident trout spawning later than the period designated by DEQ for implementing the dissolved oxygen criteria. Mr. Nigg noted the currently designated peak period of resident trout spawning for this reach of the Deschutes is from April 15 through June 15. But Mr. Nigg added that DEQ would be revising beneficial use designations with expected rulemaking presented to EQC in Spring of 2022. In order for a draft rule to be presented to the EQC in Spring of 2022 the rulemaking process would necessarily begin in 2021. Mr. Nigg also noted that DEQ was seeking input from the Oregon Department of Fish and Wildlife regarding resident trout use and that DEQ would notify DRA if

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there is a call for data related to this rulemaking. Mr. Nigg's email also states that DEQ has closed this complaint.

While Mr. Nigg's email states that the complaint has been closed, given that Mr. Nigg's email also explained that there is already planned review of the beneficial use designations there is not a final agency action expressed in the email regarding the issue raised. Rather, there is a planned timeline for review of the matter including further gathering of data and rulemaking. In this case the agency did not take an agency action but rather provided notification that agency action on this issue, through rulemaking, was already planned in the near future. In *Hawes v. State* the Oregon Court of Appeals considered whether a settlement agreement for the development of TMDLs entered by DEQ was a final order subject to judicial review. The Court found that "...the agreement expressly calls for significant further action by the DEQ in the development, implementation and enforcement of the load limits. Thus, by its terms, the agreement is 'preliminary' and 'precedes final agency action.'" 203 Or.App.255, 264. (2005) Mr. Nigg's email is similar in that it provides a timeline for agency action on the issue and therefore precedes final agency action.

The department appreciates DRA's interest in this important matter and looks forward to input from DRA in the rulemaking process.

Sincerely,

*/s/ Diane Lloyd*  
Diane Lloyd  
Assistant Attorney General  
Natural Resources Section

c: Justin Greene, DEQ  
Eric Nigg, DEQ  
Jennifer Wigal, DEQ  
Anika Marriott, DOJ

March 19, 2021

Kathleen George  
Chair, Oregon Environmental Quality Commission  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

Dear Commissioner George:

Following below is a petition from the Deschutes River Alliance requesting that the EQC direct the Department of Environmental Quality to apply Oregon's dissolved oxygen standard to discharges from Portland General Electric's (PGE) Pelton Round Butte Project in accordance with the substantial body of data concerning the timing of resident redband trout spawning in the lower Deschutes River.

On a year-by-year basis, DEQ has signed interim agreements with PGE that artificially define the period of application of the state's most protective water quality standard for dissolved oxygen (DO), with this period at odds with the standard's actual requirement in light of redband trout spawning data.

We ask that the Environmental Quality Commission direct the DEQ to apply the appropriate dissolved oxygen water quality standard in the lower Deschutes River after June 15 each year "where resident trout spawning occurs, during the time trout spawning through fry emergence occurs."

DRA seeks urgent action on this issue. Redband trout spawning has already begun this year in the lower Deschutes. With DEQ's deemed June 15 through October 15 'non-spawning' period quickly approaching, we hope that the EQC will resolve this issue before the lower Deschutes' spawning redband trout and their incubating eggs are exposed to another season of insufficient dissolved oxygen.

Sincerely,

Ben Kirsch  
Staff Attorney, Deschutes River Alliance

**BEFORE THE OREGON ENVIRONMENTAL QUALITY COMMISSION**

**Petition for Policy Direction Regarding the Dissolved Oxygen Water Quality Standard Applicable to the Resident Redband Trout Spawning through Fry Emergence Period in the Lower Deschutes River**

March 19, 2021

The Deschutes River Alliance (DRA) is a science-based advocacy organization seeking collaborative solutions to basin-wide threats to the health of the Deschutes River and its tributaries. It advocates for water quality, a healthy ecosystem, and for the establishment and protection of robust populations of resident and anadromous fish throughout the river's entire watershed. DRA's supporters rely on the Basin's continued health for their recreation, relaxation, and livelihoods.

Since its formation, DRA has sought to build a robust scientific understanding in the Deschutes Basin. Since 2014, DRA has released annual reports on our lower Deschutes River water quality monitoring and on our macroinvertebrate hatch surveys. DRA has also released reports and studies on benthic health and status, thermal imaging, land use impact on water quality, and on the Crooked River's water quality.<sup>1</sup>

In addition to our scientific research and studies, DRA has been involved in ensuring legal and administrative enforcement of state and federal laws in the lower Deschutes. DRA is currently prosecuting a lawsuit pending with the Ninth Circuit Court of Appeals to enforce the Clean Water Act with respect to the Pelton Round Butte Hydroelectric Project.<sup>2</sup> DRA has also submitted comments on numerous state and federal actions affecting the Deschutes basin.<sup>3</sup>

Here, the DRA petitions the Environmental Quality Commission, in its statutory role of providing policy direction to DEQ,<sup>4</sup> to provide direction regarding the effect of a February 4, 2004 letter from DEQ to EPA, in particular the effect of that letter on DEQ's ability to protect resident redband trout spawning in lower Deschutes River.

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<sup>1</sup> <https://deschutesriveralliance.org/science-1>.

<sup>2</sup> *Deschutes River Alliance v. Portland General Electric, et al.*, Nos. 18-35867, 18-35932, 18-35933 (9<sup>th</sup> Cir. 2020). *Appealing Deschutes River Alliance v. Portland General Electric, et al.*, Case No. 3:16-cv-1644-SI (Dist. Or. 2018). Available at link provided in Note 3.

<sup>3</sup> <https://deschutesriveralliance.org/advocacy>.

<sup>4</sup> ORS 468.035. See Exhibit A at pgs. 2-4.

**The petitioners and other interested persons include:**

*Petitioner*

Deschutes River Alliance  
5331 S Macadam Ave., Suite 330  
Portland, OR 97239  
[ben@deschutesriveralliance.org](mailto:ben@deschutesriveralliance.org)  
[sarah@deschutesriveralliance.org](mailto:sarah@deschutesriveralliance.org)  
[gmcmillan@bendbroadband.com](mailto:gmcmillan@bendbroadband.com)

*Interested Persons*

Richard Whitman  
Director, Oregon Department of Environmental Quality  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

*Cc:*

Justin Green – Water Quality Division Administrator  
Eric Nigg – Eastern Region Water Quality Manager

1. Background

The lower Deschutes River's redband trout<sup>5</sup> population is a keystone species in the lower Deschutes and a locally and internationally treasured gem. The resident redband trout fishery is "internationally known"<sup>6</sup> and attracts anglers from around the world. Numerous local businesses rely on the trout to, among other things, attract anglers to the region and to support guide services, fishing shops, hotels, and restaurants. Local pride in the fish is clear, with local schools adopting the "redside" or redband trout as their mascot.<sup>7</sup> The resident trout's importance to the region cannot be overstated. DEQ has noted the "vitaly important" role that DO concentrations play for salmonids such as the resident redband trout at issue here, which are "very sensitive to

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<sup>5</sup> Also referred to as rainbow trout. *See* Exhibit D at pg. 2.

<sup>6</sup> Bureau of Land Management. "Final Section 7(a) Determinations, Wild and Scenic Rivers Act for the Pelton Round Butte Hydroelectric Project." July 2004. *See* Exhibit E at pg. 16.

<sup>7</sup> *See generally* <https://www.swasco.net>.

reduced quantities of DO,” especially during “various life stages” such as spawning and rearing.<sup>8</sup>

On August 1, 2020, members of the science team Deschutes River Alliance observed and documented redband spawning activity on the lower Deschutes River.<sup>9</sup>

DRA was aware of an existing “interim agreement” between DEQ and Portland General Electric (PGE) pursuant to which DEQ applied the resident trout dissolved oxygen spawning criterion in the lower Deschutes River only up to June 15.<sup>10</sup> However, during periods and locations of resident trout spawning through fry emergence, the state’s water quality standard clearly fixes the DO criterion at 9.0 mg/l; (and higher where minimum intergravel dissolved oxygen, measured as a spatial median, is less than 8.0 mg/l).<sup>11</sup>

The August 1 observation data is important, as it provided concrete evidence of post-June 15 spawning – contradicting the ‘non-spawning’ period applied to the lower Deschutes River via the “interim agreement” between DEQ and PGE. Following its observations, DRA submitted a pollution complaint to DEQ in the hope that DEQ would ensure that PGE observed the resident trout spawning standard in light of this evidence.<sup>12</sup>

In responding to DRA’s pollution complaint, DEQ explained that it “implements the dissolved oxygen criteria based on the guidance [DEQ] provided to EPA in support of their approval of our dissolved oxygen standards.”<sup>13</sup> A public records request to DEQ<sup>14</sup> indicated that the guidance referenced by DEQ was a February 4, 2004 letter (hereinafter “2004 Letter”) from DEQ to EPA in which, DEQ “deemed” resident trout spawning periods based on “a lack of site specific information.”<sup>15</sup>

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<sup>8</sup> DEQ. “Final Findings and Evaluations Report on the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act.” June 19, 2002. *See* Exhibit E at pg. 12.

<sup>9</sup> *See* Exhibit B at pgs. 6-7.

<sup>10</sup> 2019 Interim Agreement. The DO criterion variance was first approved in the 2012 Interim Agreement. *See* Exhibit C at pgs. 44 and 19 respectively.

<sup>11</sup> OAR 340-041-0016(1). *See* Exhibit A at pgs. 5-6.

<sup>12</sup> DRA. Pollution Complaint #20-2069 submitted to DEQ. August 14, 2020. *See* Exhibit B at pgs. 2-5.

<sup>13</sup> Email from Eric Nigg (DEQ) to Ben Kirsch (DRA) “Re: DRA complaint response.” September 8, 2020. *See* Exhibit B at pg. 8.

<sup>14</sup> DRA. DEQ Public Records Request – Reference No. R000552-091020. Submitted September 9, 2020.

<sup>15</sup> Letter from Michael T. Llewellyn (DEQ) to Randy Smith (EPA) “Re: Oregon Responses to EPA Questions re the State’s water quality temperature standards.” February 4, 2004. (Hereinafter “2004 Letter”). *See* Exhibit C at pgs. 4-5.

## 2. Lower Deschutes River Site-Specific Information

Subsequent to DEQ's closure of DRA's pollution complaint, DRA became aware of substantial additional data documenting post-June 15 redband spawning on the lower Deschutes, consisting of spawning surveys PGE conducted from 2007 through 2014. In particular, for each year between 2007 and 2014, PGE observed and documented post-June 15 redband trout spawning activity on the last date of surveying for that year. Had surveying continued in any of these years, PGE almost certainly would have observed and documented additional spawning activity, because it is extremely unlikely that spawning activity ceased after surveying ceased. The last date of PGE-observed redband trout spawning for each of these years was as follows:<sup>16</sup>

Survey year	Latest documented redband spawning
2007	June 20
2008	July 1
2009	June 30
2010	June 21
2011	June 22
2012	June 26
2013	June 11
2014	July 1

In addition, the Oregon Department of Fish and Wildlife (ODFW) has relevant information on redband spawning in the lower Deschutes River. In 2003, ODFW created documents defining fish use and timing documents for the Deschutes Basin. For the lower Deschutes, ODFW identified redband trout spawning occurring from March 15 through July 15, with egg incubation extending to the end of August.<sup>17</sup> Since then, ODFW fish biologists have gathered monitoring data that suggests a "more protracted [spawning period] than identified in previous ODFW reports."<sup>18</sup> ODFW monitoring has observed redband trout spawning as late as December in the lower Deschutes Basin. This information, coupled with PGE's spawning surveys, clearly shows redband

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<sup>16</sup> PGE and CTWSRO. "Re: Project No. 2030 – Pelton Round Butte Hydroelectric Project Article 433 – Lower River Gravel Study – 2015 Final Report Lower River Gravel Study: Pelton Round Butte Hydroelectric Project and Final Lower Deschutes River Gravel Study Five Year Review." Submitted April 1, 2016. Available at: <https://drive.google.com/file/d/1D3Z1xaaFQIWAaDox0T-qRVBaYGNDUoPn/view?usp=sharing>.

<sup>17</sup> ODFW. "Deschutes R below Pelton Dam – Non-Anadromous Species" Timing Unit ID: 10362. November 10, 2003. See Exhibit D at pg. 2.

<sup>18</sup> Letter from Rod French (ODFW) to Jonah Sandford (DRA), "Re: Deschutes redband trout spawning." February 27, 2019. See Exhibit D at pgs. 4-5.

trout spawning occurs well past the “deemed” period currently applied by DEQ to the lower Deschutes River via agreements with PGE based on the 2004 Letter.

### 3. Policy Purpose and Goals

In general, Oregon’s water quality standards direct DEQ to continually “manage water quality... based on best information currently available ....”<sup>19</sup> Turning to DEQ’s EPA-approved dissolved oxygen rule, the rule mandates application of the protective spawning standard “where resident trout spawning occurs, during the time trout spawning through fry emergence occurs.”<sup>20</sup> The rule is unambiguous and quite straightforward, though it is understandable that application of the rule could become problematic for reaches of waterways for which there is truly a lack of site-specific information.

### 4. Conclusion and Requested Direction

The 2004 Letter should not serve as a barrier to DEQ’s protection of redband trout on the lower Deschutes River for the following reasons:

1. EPA was explicit in informing DEQ that the resident trout spawning portions of the 2004 Letter were not under consideration by EPA, and therefore not up for approval or disapproval at that time: “EPA is not acting on Oregon’s dissolved oxygen criterion at this time because it is not a new or revised water quality standard.”<sup>21</sup>; and
2. Even if EPA had approved the resident trout spawning portions of the 2004 Letter, by their explicit terms they apply only to waterways where there is a lack of site-specific spawning information. As discussed above, no such lack of information exists regarding redband trout on the lower Deschutes.

Moreover, the 2004 Letter purports to deem the resident trout *spawning* period as ending on June 15, whereas the water quality standard applies beyond the end of spawning, i.e., “during the time trout spawning *through fry emergence occurs*” (emphasis

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<sup>19</sup> OAR 340-041-0001(2). See Exhibit A at pg. 5.

<sup>20</sup> OAR 340-041-0016(1). See Exhibit A at pgs. 5-6.

<sup>21</sup> EPA “Supporting Documents for EPA’s Action Reviewing New or Revised Water Quality Standards for the State of Oregon.” March 2, 2004. See Exhibit C at pg. 14.

added).<sup>22</sup> That period extends, conservatively, into August of any year.<sup>23</sup> Therefore, DEQ's has misapplied the 2004 Letter in its interim agreements with PGE by allowing oxygen levels in PGE's discharges from the Pelton Round Butte Project to be below the standard during the crucial post-spawning through fry emergence period.

Accordingly, DRA urges the EQC to direct the DEQ to apply the dissolved oxygen criterion of at least 9.0 mg/l to the lower Deschutes River, including the reach below PGE's Pelton Round Butte Project, as follows:

1. The DEQ should reject, as insufficiently protective, any proposed interim agreement DO provision that does not fully protect resident redband trout with the "at least 9.0 mg/l criterion" during the time trout spawning through fry emergence occurs.
2. The "at least 9.0 mg/l criterion" should be applied on a year-round basis, as required by the terms of the Pelton Round Butte Project's CWA §401 Certification.<sup>24</sup>

The Deschutes River Alliance appreciates your time and careful attention on this issue. DRA looks forward to the Environmental Quality Commission's urgent response and action to protect the internationally-known, locally-treasured, and keystone-species lower Deschutes redband trout before June 15, 2021.

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<sup>22</sup> OAR 340-041-0016(1). *See* Exhibit A at pg. 5-6.

<sup>23</sup> *See* Exhibit D at pg. 2.

<sup>24</sup> DEQ. "Section 401 of the Clean Water Act Terms and Conditions." And PGE & CTWSRO. "Pelton Round Butte Project Water Quality Management and Monitoring Plan." September 2002. *See* Exhibit C at pgs. 49 and 65.





Ben Kirsch <ben@deschutesriveralliance.org>

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## DRA Petition on DO check-in

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**CALDERA Stephanie \* DEQ** <stephanie.caldera@deq.state.or.us>  
To: Ben Kirsch <ben@deschutesriveralliance.org>

Tue, Apr 20, 2021 at 6:08 PM

Hi Ben,

Thank you for the follow-up and voicemails, and your patience with my delayed reply. As I mentioned in this earlier email chain between us, in my role I often need to confer with other staff to ensure all relevant statutes and processes are being followed related to communications to the commission.

I was able to speak with the proper staff about your petition and the related next steps. In this case, the petition submitted by your group was not in the format, and did not include the content necessary, to a formal petition for rulemaking to the commission under State of Oregon statutes. As such, the petition and its attachments will be provided to the commission as correspondence, and the commission may, or may not, request additional information, follow-up action from DEQ or other action. I will transmit your original email and its two attachments to the commissioners, noting that the materials are not subject to the formal timelines and response obligations of the petition for rulemaking statutes.

The formal requirements and steps for the rulemaking petition are available on this DEQ rulemaking page, for reference: <https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rulepetitions.aspx>

In response to your other inquiry for commissioner contact information, they do have official State of Oregon email addresses for their commission business. Those are listed below, and I do ask that you copy me to any correspondence to the commission as a way for me to assist with scheduling, communication to other DEQ as staff as needed and general compliance with state recordkeeping requirements.

Chair Kathleen George: [Kathleen.George@deq.state.or.us](mailto:Kathleen.George@deq.state.or.us)

Vice-chair Sam Baraso: [Sam.Baraso@deq.state.or.us](mailto:Sam.Baraso@deq.state.or.us)

Commissioner Molly Kile: [Molly.Kile@deq.state.or.us](mailto:Molly.Kile@deq.state.or.us).

Commissioner Wade Mosby: [Wade.Mosby@deq.state.or.us](mailto:Wade.Mosby@deq.state.or.us)

Item A 000073

Please let me know if you have questions, and thanks again.

- Stephanie

\*\*\*

**From:** Ben Kirsch <[ben@deschutesriveralliance.org](mailto:ben@deschutesriveralliance.org)>  
**Sent:** Thursday, April 1, 2021 3:43 PM  
**To:** CALDERA Stephanie \* DEQ <[Stephanie.CALDERA@state.or.us](mailto:Stephanie.CALDERA@state.or.us)>  
**Subject:** Re: DRA Petition on DO check-in

Thanks for that update, Stephanie.

On Thu, Apr 1, 2021 at 3:26 PM CALDERA Stephanie \* DEQ <[Stephanie.CALDERA@state.or.us](mailto:Stephanie.CALDERA@state.or.us)> wrote:

Hi Ben,

I have asked the commission's legal counsel, a staffer with the Oregon Department of Justice, for guidance on next steps. The state's petitioning rules have specific requirements, timelines and formal steps, so I am checking to see what of these apply and what the next actions, for any parties, would be.

Once I have the information back from his review, I will be in touch about any next steps and make sure to keep you informed of any agency or commission actions in response to your petition. I don't have any timeline for that yet, but as soon as I do I will share it.

Thanks,

Stephanie

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**From:** Ben Kirsch <[ben@deschutesriveralliance.org](mailto:ben@deschutesriveralliance.org)>  
**Sent:** Thursday, April 1, 2021 12:57 PM  
**To:** CALDERA Stephanie \* DEQ <[Stephanie.CALDERA@state.or.us](mailto:Stephanie.CALDERA@state.or.us)>  
**Subject:** DRA Petition on DO check-in

Hello Ms. Caldera,

Item A 000074

Just checking in to see what the status of our petition with the EQC is. I am curious if there is a better idea about next steps and timelines for the Commission's response to our petition.

Thanks for your help and insight on this. Looking forward to hearing from you.

Have a great day. Take care.

Best,  
Ben

--

Ben Kirsch  
Staff Attorney  
Deschutes River Alliance  
[deschutesriveralliance.org](http://deschutesriveralliance.org)  
216.903.9171

--

Ben Kirsch  
Staff Attorney  
Deschutes River Alliance  
[deschutesriveralliance.org](http://deschutesriveralliance.org)  
216.903.9171

May 13, 2021

Oregon Environmental Quality Commission  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

**Submitted via email to the individual commissioners**

Dear Chair George, Vice-Chair Baraso, and EQC Commissioners:

Thank you for the EQC's reply of April 20, and now it's my turn to apologize for my delay in responding.

The Deschutes River Alliance's petition of March 19 was not a petition for rulemaking, which is why we specifically entitled it a "petition for policy direction." DRA is not seeking any change to the current rules.

Instead, DRA is requesting that the EQC direct the Department of Environmental Quality to discontinue its misapplication of OAR 340-041-0016(1) that undermines the viability of resident redband trout in the lower Deschutes River during their critical spawning through incubation lifecycle stages. Such an EQC instruction is needed before June 16, the date that, over the prior 11 years, DEQ has commenced its annual misapplication of OAR 340-041-0016(1). That misapplication has resulted in numerous post-June violations of the relevant state minimum dissolved oxygen requirement.

Because the EQC does not meet again until July, next week's meeting is the last best opportunity for the EQC to protect the lower Deschutes River's resident redband from this anticipated harm.

DEQ's current implementation of OAR 340-041-0016(1) is flawed for three reasons. First, it misinterprets the dissolved oxygen criteria's plain language. The resident trout spawning criterion requires a higher minimum DO level of 9.0 mg/l "where resident trout spawning occurs, during the time trout spawning through fry emergence occurs." DEQ's misapplication period, starting June 16, ignores this language and instead implements a non-promulgated alternative.

The second flaw is DEQ's attempted justification for its unapproved, misapplied dissolved oxygen spawning criterion application period. DEQ points to a letter it sent to the U.S. EPA in 2004 wherein it apprised the EPA of its intention to so apply, state-

wide, its DO spawning criterion. That letter did not directly seek any change in the relevant state standard and, consistent with that, EPA explicitly responded that it was “not acting on Oregon’s dissolved oxygen criterion at this time because it is not a new or revised water quality standard.” See DRA’s Petition of March 19, 2021, p. 6, and its Exhibit C, p. 13. To our knowledge, EPA has never otherwise responded to the 2004 letter.

Finally, DEQ has ignored clear and reliable data that shows redband spawning in the lower Deschutes well past June 16. Both the Oregon Department of Fish and Wildlife and Portland General Electric have clearly established that redband trout spawn well after June 16 in the lower Deschutes River, with incubation extending even further into the calendar year. DRA has provided to you additional such evidence. In light of the relevant information, DEQ’s prior pattern of OAR 340-041-0016(1) implementation must not be repeated.

The Deschutes River Alliance accordingly again requests, with respect to the lower Deschutes River, that the Environmental Quality Commission direct DEQ to enforce the requirement that dissolved oxygen be maintained at or above 9.0 mg/l during the resident trout spawning through fry emergence period.

We request this topic be added to the agenda for the EQC’s May 20-21 Regular Meeting, and further request the opportunity to speak to the question.

Thank you, again, for your attention to this matter. We look forward to the discussion on May 20 or 21.

Sincerely,



Ben Kirsch  
Staff Attorney, Deschutes River Alliance

## **EXHIBIT C**

### **Documents Describing Dissolved Oxygen Implementation in the Lower Deschutes River**



# Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality

811 SW Sixth Avenue  
Portland, OR 97204-1390  
503-229-5696  
TTY 503-229-6993

February 4, 2004

Mr. Randy Smith, Director  
Office of Water  
U.S. EPA Region 10  
1200 Sixth Avenue  
Seattle, WA 98101

Re: Oregon Responses to EPA Questions re the State's water quality temperature standards

Dear Mr. Smith:

This letter is a follow up to our similar correspondence of December 19, 2003, which described Oregon's newly adopted antidegradation and temperature rules. There are three purposes for this letter. First, we are offering similar clarifications regarding the State's intended methodology for identifying natural conditions for parameters other than temperature. Second, we are commenting on several proposed conservation measures EPA is developing pursuant to consultation under the Endangered Species Act. Finally, we are providing your Agency with information on the application of the dissolved oxygen criteria to resident fish spawning.

## Natural Conditions

As we indicated in our earlier letter, our revised rules make it clear that where DEQ identifies a natural condition which is less stringent than the numeric criteria set out in the State's water quality standards, the natural condition supercedes the numeric criteria. Very similar language appeared in our previous rules, which were previously approved by EPA.

By definition, "natural conditions" are those pollutants that are present in the State's waters that are not attributable to anthropogenic activities. Rather, these conditions are caused by local geophysical, hydrological and meteorological processes and wildlife. DEQ anticipates that site-specific natural conditions might be identified for the following parameters:

- Bacteria (attributed to wildlife)
- Metals (attributed to naturally eroding ore deposits)
- Nutrients (attributed to background soil, vegetation and/or wildlife conditions)
- Sediments and Turbidity (attributed to soil erosion and/or organic matter not accelerated by human activities)

Item A 000079

- Other parameters attributed to similar natural processes.

Prior to a natural condition superceding otherwise applicable numeric criteria, DEQ will make a finding as to the level at which the pollutant is present with no influence from anthropogenic activities. Similarly, DEQ will document the natural process contributing to the presence of the pollutant. The specific methodology used to support a natural condition finding may vary in each local situation. However, in general the methodologies used will be similar to that described in our December 19, 2003 letter:

- Reference streams,
- Pollutant transport models,
- DNA testing,
- Historical data (where available) and/or
- Other sampling methods and studies.

The public will have specific notice of these natural conditions whenever they are relevant to one of the Clean Water Act regulatory programs. The public notices and documentation accompanying the biannual 303(d) listing process, draft TMDLs, draft NPDES permits and 401 water quality certifications will indicate that the otherwise applicable numeric criteria have been superceded by a natural conditions finding. Moreover, since 303(d) listings and TMDLs are transmitted to EPA for approval, the Agency will have an opportunity to review DEQ's natural conditions conclusions. DEQ is committed to work with EPA as natural condition methodologies are refined in the TMDL, NPDES and 303(d) listing contexts.

DEQ expects that natural conditions will most commonly be identified through the TMDL process. In that circumstance, EPA will have an opportunity to review and evaluate any natural condition determination as part of its TMDL approval action. DEQ will list the water bodies where "natural conditions" findings have been made on our standards web page to ensure that the public is aware and notified of natural conditions,

It should be noted that it is possible, at some locations in the State, that the natural condition will not support, and never has supported a designated beneficial use. In such circumstances, DEQ will modify the designated use to properly adjust the beneficial use to better reflect the existing use of the water segment.

#### Proposed Conservation Measures

DEQ is aware that EPA is considering several conservation measures associated with its approval of the State water quality standards revisions. EPA has inquired whether DEQ would participate in these conservation measures if they are pursued. To begin with, DEQ notes that most of these conservation measures pursue information on the future *implementation* of the State's standards. They are best categorized as efforts intended to identify additional information supporting the use of our standards once they are in place.



Since Oregon has a strong interest in these federal initiatives, DEQ will, resources allowing, participate in the proposed conservation measures as described in EPA's Biological Evaluation: Temperature Monitoring and Use Designations.(2.5.1) and the Two Year Review (2.5.2).

#### Dissolved Oxygen and Spawning

The revised Oregon rules clarified spawning locations and timing for anadromous fish and Lahontan Cutthroat Trout. Due to a lack of site specific data for species other than these, and since temperature criteria for spawning were not established for other species, no similar clarification was made for resident trout (i.e., rainbow, redband, Westslope cutthroat and coastal cutthroat) or char (bull trout) spawning. However, the dissolved oxygen criteria contain provisions that continue to apply to resident trout and char spawning areas. DEQ will use the following dates to apply the dissolved oxygen spawning criteria (throughout the range where the Oregon maps indicate trout rearing, redband trout and core cold water habitat uses are identified).

#### Resident Trout Spawning (Redband, Rainbow, Westslope and Coastal Cutthroat)

- *For waters designated as trout rearing, or redband trout use, spawning is deemed to occur from January 1 – May 15 each year;*
- *For waters designated as core cold water habitat, or bull trout spawning and rearing use, resident trout spawning is deemed to occur from January 1 – June 15 each year; and*
- *For trout rearing waters upstream from core cold water habitat, spawning is also deemed to occur from January 1 – June 15 each year.*

#### Char (Bull Trout) Spawning

The following dates apply to all reaches designated as having “bull trout spawning and rearing use” within the specified basin or subbasin:

<u>Basin</u>	<u>Subbasin</u>	<u>Spawning Period</u>	<u>Source of Information</u>
South Willamette		Aug 15 – May 30	ODFW
John Day		Sept 1 – April 30	ODFW
Umatilla		Sept 1 – April 30	ODFW

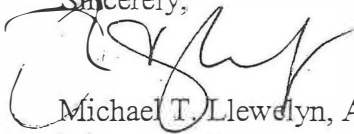
Randy Smith letter  
February 4, 2004

Walla Walla		Sept 1 – April 30	ODFW
Grand Ronde	Upper G. R.	Sept 1 – April 15	ODFW
	Wallowa	Sept 1 – May 15	ODFW
	Wenaha	Aug 15 – March 31	ODFW
Imnaha		Aug 15 – May 31	ODFW
Hood		Aug 15 – May 15	USFWS
Deschutes		Aug 15 – May 15	USFWS
Powder		Aug 15 – May 15	USFWS
Malheur		Aug 15 – May 30	USFWS
Klamath		Aug 15 - May 30	USFWS

This timing information will be circulated to DEQ field staff responsible for implementing the dissolved oxygen criteria. DEQ will continue to refine all of these designations as more information is developed on resident trout and char spawning activities.

Oregon looks forward to EPA's review and approval of our water quality standards. If you require any additional information or clarification of these rules, please contact me or have your staff call Mark Charles, water quality standards manager at (503) 229-5589.

Sincerely,



Michael T. Llewellyn, Administrator  
Water Quality Program

Cc: Stephanie Hallock - DEQ  
Mark Charles - DEQ  
Paula van Haagen - EPA  
Mary Lou Soscia - EPA



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**  
1200 Sixth Avenue  
Seattle, WA 98101

March 2, 2004

Reply To  
Attn Of: OW-131

Stephanie Hallock, Director  
Oregon Department of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, OR 97204-1390

Re: Approval of Oregon State Water Quality Standards (OAR 340-041) for Temperature, Inter-Gravel Dissolved Oxygen and Antidegradation

Dear Ms. Hallock:

Thank you for your letter of December 10, 2003, on behalf of the Oregon Department of Environmental Quality (ODEQ) submitting new and revised water quality standards for Temperature, Inter-Gravel Dissolved Oxygen and Antidegradation to the U.S. Environmental Protection Agency (EPA) in accordance with section 303(c)(2)(A) of the Clean Water Act (CWA).

Based on a review of the ODEQ submission and supporting documentation, EPA finds the new or revised provisions that we reviewed are consistent with the CWA and EPA's implementing regulation at 40 CFR Part 131. The enclosure to this letter (*Support Document for EPA's Action Reviewing New Or Revised Water Quality Standards for the State of Oregon, March, 2, 2004*) lists, in Section 1, the provisions EPA is approving today, and, in Section 4, other provisions that ODEQ revised and submitted to EPA but upon which EPA is not acting for reasons explained in that document. This enclosure also discusses the bases for EPA's approval of the provisions upon which we are acting. Other support for EPA's action today is contained in the record for the approval.

In addition, EPA's approval action today fulfills EPA's obligations in Northwest Environmental Advocates vs U.S. EPA, et al., Civil No. 01-510 HA. On August 13, 2003, the U.S. District Court for the District of Oregon directed EPA either to promulgate a federal rule or to approve final state regulations by March 2, 2004, regarding the following water quality standards: (1) numeric water quality criteria for temperature for the protection of salmonid rearing and bull trout spawning in Oregon waters; (2) an intergravel dissolved oxygen criterion to protect salmonid spawning in Oregon waters; (3) water quality criteria for temperature for the lower Willamette River; and (4) methods to implement Oregon's existing antidegradation policy. Oregon's revised water quality standards, as approved today by EPA, fulfill the requirements of the U.S. District Court, so EPA does not intend to promulgate federal standards.

Pursuant to Section 7 of the Endangered Species Act (ESA), EPA has consulted on this federal approval action of Oregon Water Quality Standards. In December 2003, EPA provided to NOAA's National Marine Fisheries Service (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) a biological evaluation regarding EPA's approval action. In January 2004, EPA provided to NOAA Fisheries an Essential Fish Habitat (EFH) Assessment of EPA's approval action, pursuant to Section 305(b)(2) of the Magnuson-Stevens

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Fishery Management and Conservation Act (MSFM Act). Final Biological Opinions under ESA authorities were provided to EPA by NOAA Fisheries on February 23, 2004, and by USFWS on February 24, 2004. After receiving NOAA Fisheries' conservation recommendations under the MSFM Act, EPA responded to NOAA Fisheries under the MSFM Act on February 24, 2004, indicating EPA's intent to implement those recommendations.

I want to congratulate both ODEQ and others in the State for the development of these water quality standards. These standards will provide an important contribution to salmonid protection and recovery efforts in the Pacific Northwest. These standards and the associated maps showing designated uses and life species timing provide "state of the art" tools and a national model for protecting Oregon waters and aquatic species, especially Pacific salmon, cared for so deeply by the citizens of Oregon and the Pacific Northwest. Protection and restoration of Pacific salmon is highly dependent on water temperature. Progress toward CWA standards attainment is critical to recover, restore and protect salmon populations. These standards provide important benchmarks to state, tribal, local and federal governments, watershed councils and citizens as communities move forward on watershed recovery efforts.

ODEQ is also to be commended for the extensive public outreach you held during 2003 as part of your rule making. We also thank you for your support of the Regional Temperature Guidance work during the preceding years; that scientific and policy work, and outreach to stakeholders, served as an important foundation for the ODEQ rules that we are approving today.

I would like to extend my deep appreciation to you and your staff for ODEQ's exceptional efforts and commitment to work with EPA, NOAA Fisheries and USFWS to meet our CWA and ESA responsibilities. If you have any questions concerning this letter please contact me at (206) 553-1234 or have your staff contact Mary Lou Soscia at (503) 326-5873.

Sincerely,

/S/

L. John Iani  
Regional Administrator

Enclosure

cc: Michael Tehan, NOAA Fisheries  
Kemper McMaster, U.S. Fish and Wildlife Service  
Holly Schroeder, Oregon DEQ  
Robert Baumgartner, Oregon DEQ  
Mark Charles, Oregon DEQ

Support Document for EPA's Action Reviewing  
New Or Revised Water Quality Standards for the State of Oregon

**March 2, 2004**

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at all. EPA does not believe that is reasonable because naturally occurring water quality is and can be protective of a designated use. Thus, EPA has made the decision that it is appropriate for states and tribes to include narrative natural condition criteria for parameters that naturally occur in the environment.

*Comment:* DEQ intends to adopt less stringent criteria without Federal oversight. A process for determining natural conditions should be established up front in the rule language.

*EPA Response:* Natural conditions criteria are analogous to narrative criteria which are interpreted and implemented in the context of water quality assessment, TMDL establishment, and NPDES permit issuance. EPA regulations do not require states to provide an implementation methods in their standards, although EPA considers methods to determine whether they will undercut the intent of the standards (48 FR 51400, 51411 (November 8, 1983)). However, Oregon has described the methods it will use to determine natural condition for temperature and other parameters in its letters to EPA from Mike Llewellyn dated December 19, 2003 and February 4, 2004. EPA has determined that Oregon's definition of "natural conditions" is reasonable and limits application to only those situations where the amount of the pollutant is demonstrated to be less stringent than the otherwise applicable numeric criteria due solely to non-anthropogenic reasons.

## 2.4 INTERGRAVEL DISSOLVED OXYGEN (IGDO) 8.0 mg/l [OAR 340-041-0016(1)(a)(C)]

Oregon revised their IGDO criterion as follows:

**For water bodies identified as active spawning areas in the places and times indicated ..., The spatial median IGDO concentration must not fall below 8.0 mg/l**

The State has identified when and where salmonid and trout spawning occurs throughout the State and has provided the information in the tables and figures set out in OAR 340-041-0101 to 340-041-0340. The purpose of the IGDO criterion is to protect salmonid spawning and egg incubation to fry emergence from low dissolved oxygen concentrations.

**Action:** EPA approves Oregon's revised criterion for IGDO and because it has determined that the provision meets the requirements of Section 303(c)(2)(A) and 40 CFR 131.6 and 131.11 and is consistent with EPA's recommended criterion for IGDO as detailed in EPA Quality Criteria for Water, 1986. This determination is based on a review of the literature regarding IGDO and salmonid spawning. An 8 mg/L IGDO criterion, applied as a spatial median, is protective of early life stages of salmonids because available data show that 8 mg/L, as a mean, is above levels<sup>6</sup> that reduce embryo survival, cause delayed emergence, reduce growth in alevins, increase susceptibility to disease, and cause increased uptake of toxics. As a point of comparison, most studies of the effects of differing levels of IGDO report results as measurements of the mean (as opposed to instantaneous measurements of concentrations). Oregon had previously defined a spatial median as the "value which falls in the middle of a data set of multiple IGDO measurements taken within a spawning area." A median value as a criterion indicates that half the sampling measurements taken should be above (and half below) the criterion (or spatial median). Median values are useful statistical tools because they are not overly influenced by a

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<sup>6</sup> With this parameter, intergravel dissolved oxygen (IGDO), a higher level is less toxic than a lower level.

few extreme values, but actually reflect the middle of a frequency distribution.

A general review of toxicity studies from both the laboratory and field shows that mean IGDO levels below 6-8 mg/L may adversely affect early life stages of salmonids. Many variables affect IGDO concentrations, including temperature, water velocity, and amount of fine sediments. Salmonid DO requirements increase with increasing temperatures, reduced stream velocities, and increased fine sediments (ODEQ 1995). At 15 °C (59 °F), mean IGDO requirements for steelhead between egg fertilization and hatching have exceeded 10 mg/L (Rombough 1986, Carlson 1980). In this action, EPA is approving temperature criteria of 13°C for salmon and steelhead spawning and 12°C for bull trout spawning. ODEQ (1995) observed that embryo survival in field studies is negligible when IGDO falls below 5 mg/L. Maret et al. (1993) estimated negligible embryo survival associated with mean IGDO concentrations below 8.0 mg/L from a field study conducted to determine correlations between percent fine sediment, oxygen saturation, and IGDO concentrations.

Several studies have documented that low IGDO concentrations appear to reduce the likelihood of survival to emergence or post-emergent survival for embryos (ODEQ 1995). ODEQ (1995) observed that alevin size was positively correlated with IGDO concentrations. Maret et al. (1993) reported reduced growth (length) in brown trout alevins at moderate mean IGDO concentrations of 6 to 7 mg/L, as compared with that of alevins incubated at mean IGDO concentrations of 9 to 10 mg/L. ODEQ (1995) found that alevins raised at low DO concentrations were smaller; however, the fish eventually reached nearly the same weight as fish incubated at higher DO concentrations. ODEQ (1995) similarly reported compensatory growth in chinook salmon and steelhead trout after about 2 months. The ability of fry to survive in their natural environment may be related to the size of fry at hatch (ODEQ 1995). Results from several researchers (ODEQ 1995; Chapman and McLeod 1987) studying coho salmon demonstrate that late-emerging alevins and small-sized fry are poor competitors and face almost certain death from predation, disease, starvation, or a combination of these.

IGDO concentrations, water column velocities, and especially the intergravel flow rate, are often interrelated variables that affect the survival of incubating embryos (ODEQ 1995). Sowden and Power (1985), from fieldwork with rainbow trout embryos, reported 50 percent embryo survival with a mean IGDO concentration of 8 mg/L and seepage velocities exceeding 100 cm/hr. These authors also reported that survival was negligible at intergravel water velocities below 20 cm/hr.

In field testing of brown trout spawning habitat impacted by nonpoint source pollution (agricultural pollutants) in Idaho, Maret et al. (1993) found a significant relationship between IGDO and survival. Percent survival was estimated to be less than 10 percent when mean IGDO fell below 8.0 mg/L. Maret et al. (1993) suggest that growth and survival were positively correlated to mean IGDO concentrations above 8.0 mg/L when seepage velocities exceeded 100 cm/hr.

Results of field studies in Oregon were similar to those reported by Maret et al. (1993) in Idaho. Survival was negligible for juvenile salmonids when IGDO concentrations fell below 6 mg/L, especially at relatively low intergravel velocities (ODEQ 1995). Hollender (1981), studying wild brook trout, observed that survival of embryos in natural redds (the depressions in which salmon deposit their eggs) exposed to IGDO concentrations usually above 6.0 mg/L were positively correlated with the mean IGDO concentration up to 8.0 to 9.0 mg/L. Hollender (1981) observed an overall mean IGDO level in the natural redds of 8.2 mg/L, with a range of means between 3.7 and 11.6 mg/L with only about 25 percent of the redds with mean DO concentrations below 6 mg/L. Artificial redds used in the this study produced much lower survival, but also indicated negligible survival below a mean of about 8.0 mg/L. Phillips and



Campbell (1962) studied steelhead in streambed gravels and recovered few or no sac fry from containers placed where mean oxygen concentrations were below 8 mg/L. ODEQ (1995), studying juvenile trout, found approximately 35 percent survival at mean IGDO concentrations of 6 mg/L and approximately 95 percent survival when the mean IGDO concentration was 8 mg/L. Results from ODEQ (1995) suggest that mean IGDO concentrations less than 5 mg/L are lethal.

ODEQ (1995) reports that low DO concentrations increase the acute toxicity of various toxicants such as metals (e.g., zinc) and ammonia. ODEQ (1995) reports that rainbow trout eggs excrete most of their nitrogenous wastes as ammonia, which is also a common pollutant. The toxicities of environmental pollutants may be compounded by low DO concentrations. Eggs in redds exposed to ammonia under conditions of low IGDO concentration and low water velocity may experience ammonia toxicity due to insufficient oxygen to nitrify ammonia. In addition, under these conditions, ammonia nitrification can act to further reduce already low IGDO concentrations.

The scientific literature reviewed above suggests that adverse effects increase markedly at mean IGDO concentrations less than 8 mg/L. Most of these studies have examined the effect of IGDO concentrations under controlled conditions that allow minor variations in concentration. These conditions facilitate the interpretation of the study results; however, they do not mimic the natural environment where IGDO varies within a redd or across a waterbody. Oregon has promulgated an IGDO criterion, from spawning until fry emergence from the gravels, that states that the spatial median IGDO concentration should not fall below 8.0 mg/L. As stated previously, by definition (OAR 340-041-002, No. 53), this means that half of the measurements of IGDO within a spawning area would have values less than 8.0 mg/L, and half would have values greater than 8.0 mg/L. Therefore, some developing embryos will be exposed to concentrations less than an absolute minimum of 8.0 mg/L (as they also were in studies reporting mean concentrations of 8 mg/L that protected embryo development and survival). However, IGDO values vary not only across a stream, but also within an individual redd. Using a spatial median to implement this criterion makes sense, as it assures that when measured across any given spawning area, the distribution of IGDO concentrations will be centered around 8.0 mg/L, a value demonstrated to protect fertilization, embryo development, and survival. This indicates that enough of the redd will have IGDO values sufficient to provide for spawning and egg incubation to fry emergence. Therefore, EPA has determined that Oregon's 8.0 mg/L IGDO criterion will protect designated uses for spawning and egg incubation to fry emergence.

### **Responses to Significant Comments:**

*Comment:* Concern was expressed that the State did not provide a definition of "active spawning areas."

*EPA Response:* The State has designated that the IGDO criterion applies to the spawning areas designated in the tables and maps at OAR 340-041-0101 to 340-041-0340. Those areas were designated through a process that identified spawning areas based on known fish use information about documented observations, as well as the best professional judgment of local field biologists as to where use is likely to occur based on suitable habitat (i.e., waters near areas of documented life stage presence on the same waterbody that have similar habitat features, such as flow volume, gradient, gravel size, and pool frequency, and no known obstructions or reasons why the use would not also be present in these waters). The database used was developed by ODFW and reflected information collected over the past five life cycles for a particular species, which ranges from 15 to 35 years. Therefore, the areas identified where the IGDO criterion would apply are broader than just where spawning is currently observed to occur. See the

discussion in Section 2.13 (Oregon's Salmonid Use Designations) of this document.

*Comment:* A question was raised to why the Dissolved Oxygen (DO) in the water column only has to meet 9 mg/L (vs. 11 mg/L) when the IGDO is 8mg/L.

*EPA Response:* EPA took action on Oregon's dissolved oxygen criterion in 1999, approving the criterion as protective of salmonid uses. EPA is not acting on Oregon's dissolved oxygen criterion at this time because it is not a new or revised water quality standard. However, it is important to note that the IGDO criterion applies independently of the previously adopted dissolved oxygen criterion.

*Comment:* Concern was expressed about the barometric pressure exception to the IGDO criterion.

*EPA Response:* EPA is not taking action on this provision, as it was part of the approval action taken in 1999 and the provision is not new or revised.

*Comment:* Concern was expressed over whether the spatial median of 8 mg/L IGDO criterion was only going to be used as a trigger for possible action by Oregon Department of Environmental Quality.

*EPA Response:* The comment refers to Oregon's previous IGDO criterion. The revised criterion that EPA is acting on does not contain that language. The spatial median of 8 mg/L is the criterion.

*Comment:* Concern was expressed over an exception to the cold-water aquatic-life DO criterion.

*EPA Response:* This criterion is not new or revised; therefore, EPA is not taking action on it at this time.

### **Response to Biological Opinion (BO) findings on IGDO**

USFWS and NOAA Fisheries Biological Opinions (2004) disagreed with EPA's Biological Evaluation ("BE") (EPA, Feb. 2004) effects determination for Oregon's IGDO criterion. EPA determined that approval of the IGDO criterion (spatial median of 8 mg/L) would not adversely effect salmonids because it was within the protective range (8 mg/L - 12 mg/L) of IGDO thresholds for salmonids spawning through fry emergence, as cited in the scientific literature described above. Most of the data in the scientific literature is reported as mean values, as discussed above. NOAA Fisheries did not concur "due to the natural high variability in IGDO, stream reaches areas meeting the criterion will include localized areas of lower IGDO." USFWS concluded that the criterion, because it is measured as a "spatial median," would allow some developing embryos to be exposed to reduced IGDO concentrations below 8 mg/L, and some embryos may be adversely affected by this criterion. Although both Services found the threshold of 8 mg/L to be adequate to avoid jeopardizing the continued existence of threatened and endangered salmonids, they found that the metric, the spatial median, allowed the IGDO concentration to fall below 8 mg/L in some times and places and thus would cause some adverse effects to individuals in some places. Given the variability of IGDO in the natural environment and the fact that the studies used to determine the protection offered by the IGDO criterion measured IGDO as a mean, EPA has determined that the spatial median is an appropriate metric and that Oregon's criterion will protect the designated use.

IGDO concentrations are difficult to measure and assess. Available data indicate that the levels

of IGDO will vary widely, both spatially and temporally due to biological, chemical, and physical factors. This is because IGDO varies naturally throughout the day and is affected by weather, the photosynthesis of plant life within a waterbody, and other factors. Levels can vary within a single redd, as well as within spawning gravel in a stream. Levels vary naturally over the course of 24 hours, with IGDO levels decreasing overnight during respiration (the process or processes involved in the exchange of oxygen and carbon dioxide between an organism and the environment), and increasing during the day, during photosynthesis (the metabolic process in plants that produces oxygen from carbon dioxide, water, and sunlight).

Coble (1961), Turnpenny and Williams (1980) observed significant spatial variability of IGDO within individual gravel areas and between gravel areas. Using mean values for standpipe measures and lowest values for interstitial DO, the authors demonstrated increased survival with IGDO concentration above 4.9 mg/L

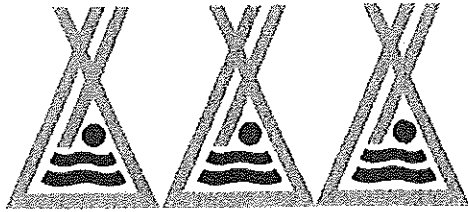
Additionally, NOAA Fisheries found that adverse effects may occur to some individuals due to the uncertainties surrounding the science. EPA does not disagree with the conclusion that there is uncertainty surrounding IGDO due to gaps in the scientific literature; however, EPA has determined that given the available science, as cited in the Biological Evaluation (EPA, Feb. 2004), 8 mg/L is an appropriate IGDO level to protect the designated uses. The findings of studies cited in the BE (and above), taken together, suggest that adverse effects may occur below mean IGDO levels of 8 mg/L and positive effects above mean IGDO levels of 8 mg/L. However, in order to determine that a waterbody meets the 8 mg/L spatial median criterion, enough of the the waterbody will have levels of IGDO above 8 mg/L and therefore, sufficient to protect the designated uses of spawning and egg incubation to fry emergence. Given that the studies used to determine the protective value of 8 mg/L IGDO measured IGDO as a mean value, it is reasonable to conclude that a spatial median value of 8.0 mg/L will protect the spawning use. The CWA calls for EPA and states to use the best available science when establishing criteria, which Oregon did here.

## **2.5 TEMPERATURE NUMERIC CRITERIA FOR OREGON'S SALMONID USE DESIGNATIONS [OAR 340-041-0028(4)]**

### **Oregon's Metric - Maximum Seven-day Average of the Daily Maximum**

**Action:** EPA approves the use of Oregon's metric, maximum seven-day average of the daily maximum (7DADM) as consistent with the CWA and its implementing regulations. Under the CWA and EPA's regulations at 40 C.F.R. §§ 131.3(b); 131.5(a)(2); 131.6(c), 131.11(a) criteria must be sufficient to protect the designated uses established by the State. Use of this metric is protective of the designated uses for the reasons discussed in the Temperature Guidance and in the preamble to EPA's proposed Oregon water quality standards.

This metric is oriented to daily maximum temperatures, so it can be used to protect against short term acute effects, such as lethality and migration blockage conditions. The 7DADM metric describes the maximum temperatures in a stream, but is not overly influenced by the maximum temperature of a single day. Thus, it reflects an average of maximum temperatures that fish are exposed to over a week-long period. Although the maximum temperature of a single day may be higher than the 7DADM value, temperature data indicate that it is unlikely to be more than 1°C. (See Temperature Guidance.) Because the criteria are oriented to protect for chronic sub-lethal effects and are well below temperatures that would cause short-term lethality, having a day or two with a daily maximum slightly higher than the 7DADM value would be biologically insignificant and would not undermine the protectiveness of the 7DADM criteria.



**Confederated Tribes of the Warm Springs  
Reservation of Oregon**  
*P. O. Box 960 • Warm Springs, OR 97761*



**Portland General Electric Company**  
*121 S.W. Salmon Street • Portland, OR 97204*

March 8, 2011

Deepak Sehgal  
Tribal Environmental Office Manager  
Confederated Tribes of the Warm Springs  
Reservation of Oregon  
PO Box C  
Warm Springs, OR. 97761

Steve Kirk  
Hydroelectric Specialist, Eastern Region  
Oregon Department of Environmental Quality  
475 NE Bellevue Drive, Suite 110  
Bend, OR 97701-7415

**Re: Pelton Round Butte Hydroelectric Project**  
**2011 SWW Interim Operating Procedure**

Dear Dee and Steve:

I have enclosed the final version of the Joint Licensee's 2011 Interim Operating Procedure for the Pelton Round Butte SWW facility. This version includes all of the revisions that you provided to PGE on February 14, 2011.

PGE is now operating the SWW pursuant to this procedure and will continue to do so for the remainder of 2011. As noted in the procedure, PGE will consult with DEQ and the WCB before making any changes in the procedure.

Please feel free to contact me at (503) 464-8864 if you have any questions about the enclosed procedure.

Very truly yours,

Julie A. Keil, Director  
Hydro Licensing and Water Rights

cc:  
Fish Committee

Item A 000092

**EXHIBIT C - Page 15 of 83**

**Pelton Round Butte Project  
(FERC Project No 2030)**

**Selective Water Withdrawal  
2011 Interim Operating Procedure**

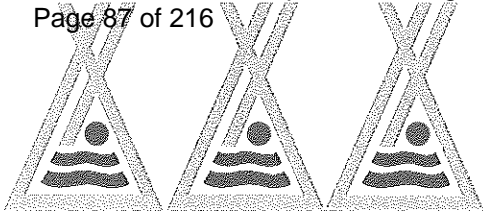
After consultation with the Oregon Department of Environmental Quality (DEQ) and the Water Control Board (WCB) of the Confederated Tribes of the Warm Springs Reservation of Oregon, Portland General Electric Company (PGE) will operate the Round Butte Selective Water Withdrawal structure (SWW) in the following manner during 2011:

For the period January 1, 2011, through December 31, 2011, PGE will implement an interim operating procedure for the SWW in accordance with the modeled flow blend referred to as "Blend 17" described in the Round Butte Dam Selective Water Withdrawal Design Basis Report (CH2MHill 2007). Current forebay temperature profile data indicate that the thermal profile in Lake Billy Chinook is near that predicted by the hydrodynamic model utilized in the WQMMP. As a result, it is likely that discharge temperatures will more closely approximate those predicted by the model for Blend 17.

This interim operating procedure will allow the Joint Licensees to generate an entire year of data, operating with a "set up" reservoir. During this period, PGE will calculate the Natural Thermal Potential (NTP) on a seven day rolling average, using the regression analysis utilized during the 1999 water temperature study. In addition, PGE will create curves that represent the average of the NTP over both a three and a five-year period and calculate frequency distribution curves of the difference between NTP and measured temperature at the point of compliance based on the 7-day average of daily maximum temperature. This information will be useful in developing operating plans for future years.

In the event that the discharge temperature at the Reregulating Dam shows a significant deviation from NTP, PGE will consult with DEQ and the WCB before making any change to the operation of the SWW. Significant deviation is considered 1°C (above NTP + .25°F).

PGE will also implement improvements to the programmable logic controls related to the SWW. The goal of these changes is to make the system more nimble and to allow deviations from the Blend 17 flow percentages to be made more easily. It will be necessary to deviate from the Blend 17 percentages for short periods of time in order to test the changes to the PLCs. PGE will notify DEQ and the WCB before beginning such tests.



**Confederated Tribes of the Warm Springs  
Reservation of Oregon**

*P. O. Box 960 • Warm Springs, OR 97761*

**Portland General Electric Company**

*121 S.W. Salmon Street • Portland, OR 97204*

May 15, 2012

Ms. Bonnie Lamb  
Oregon Department of Environmental Quality  
475 NE Bellevue St  
Suite 110  
Bend, OR 97701

**Re: Pelton Round Butte Hydroelectric Project  
Section 401 Interim Agreement**

Dear Bonnie:

Enclosed for files of the Oregon Department of Environmental Quality ("DEQ") is an executed original copy of the Section 401 Interim Agreement that was signed by DEQ on April 26, 2012, and by Portland General Electric Company on May 8, 2012. We have also provided a copy of this executed agreement to the Water Control Board of the Confederated Tribes of the Warm Springs Reservation.

Thank you for your assistance in drafting and completing this agreement.

Very truly yours,

Julie A. Keil, Director  
Hydro Licensing and Water Rights

cc:  
Water Control Board  
Kurt Burkholder

RECEIVED  
MAY 17 2012  
DEQ  
Eastern Region Bend  
Item A 000094

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE"), as Operator for the Pelton Round Butte Hydroelectric Project (the "Project"), on behalf of itself and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together are the Joint Licensees for the Project.

**RECITALS**

- A. The Joint Licensees are the owner and operator of the Pelton-Round Butte Hydroelectric Project, located on the Deschutes River in Jefferson County, Oregon.
- B. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- C. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 is a pH Management Plan. Section 5 is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans since the new license was issued in accordance with Condition A of the § 401 Certification.
- D. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- E. The § 401 Certification and the WQMMP require the Joint Licensees to discharge temperatures at the Reregulating Dam that are at or below Natural Thermal Potential ("NTP") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 8°C. NTP is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated NTP can decrease before

the cooler water reaches the Reregulating Dam, which may lead to an exceedance of NTP.

- F. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ standard(s) after a period of required monitoring of dissolved oxygen levels. As of the Effective Date, the SWW has not been operating long enough for the Joint Licensees and DEQ to determine whether DEQ's 11.0 mg/L or its 9.0 mg/L standard will apply below the Project during the spawning season of the year. As identified in the WQMMP, one more year of intergravel dissolved oxygen monitoring is needed before this determination can be made.
- G. The purpose of this Agreement is to provide a framework for the Joint Licensees to continue to observe temperature and dissolved oxygen levels in the Deschutes River below the Project in order to obtain sufficient information about the operation of the SWW to modify the WQMMP, if necessary, to reflect the temperature and dissolved oxygen standards applicable to that portion of the river.

## **AGREEMENT**

Therefore, the Parties agree as follows:

### **1. Applicable Temperature Standard**

During 2012, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the NTP. During such cooling events, the 7-day average daily maximum discharge temperature below the Reregulating Dam can be up to 0.5°C above NTP for up to 3 days before the Joint Licensees bring discharge temperatures back to the standard of NTP+0.25°F.

### **2. Applicable Dissolved Oxygen Standard**

- a. During the period from June 16 to October 14, 2012, PGE will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve a dissolved oxygen concentration of 8.0 mg/L (or 90% saturation) in the Deschutes River downstream of the Reregulating Dam. Except as provided in Paragraph 2(b), at all other times PGE will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve a dissolved oxygen concentration of 11.0 mg/L (or 95% saturation).
- b. At any time after January 1, 2013, if sampling demonstrates that an inter-gravel dissolved oxygen concentration of at least 8.0 mg/L is maintained in the Deschutes River downstream of the Reregulating Dam, PGE will operate the Project to achieve a water column dissolved oxygen concentration of 9.0 mg/L during the period from October 15 to June 15.



### 3. Revision of WQMMP

After one year of operation of the SWW after the Effective Date, the Joint Licensees will file with DEQ and the CTWS Water Control Board ("WCB") a revised WQMMP that incorporates the measures needed to satisfy the temperature and dissolved oxygen standards applicable in the Deschutes River below the Reregulating Dam. Upon DEQ and WCB approval, PGE will file the revised WQMMP with FERC and implement it.

### 4. Relationship to WQMMP

This Agreement does not otherwise affect, modify, or supersede PGE's obligations under the WQMMP.

### 5. Entire Agreement

This Agreement contains all the terms and conditions agreed upon by the Parties.

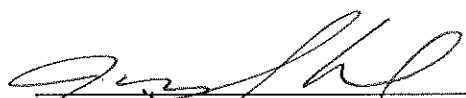
### 6. Modification

Modifications to this Agreement shall be made only by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

### 7. Effective Date

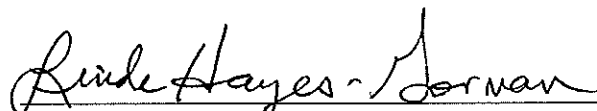
The Effective Date of this Agreement is the date of the latest signature below.

#### PORTLAND GENERAL ELECTRIC COMPANY

  
\_\_\_\_\_  
Julie Keil, Director,  
Hydro Licensing and Water Rights

8 May 12  
Date

#### OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

  
\_\_\_\_\_  
Linda Hayes Gorman  
DEQ Regional Division Administrator

4-26-12  
Date

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE"), as Operator of the Pelton Round Butte Hydroelectric Project (the "Project") located on the Deschutes River in Jefferson County, Oregon, on behalf of itself and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together are the Joint Licensees for the Project (PGE and DEQ are sometimes referred to herein as the Parties).

**RECITALS**

- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP require the Joint Licensees to discharge temperatures at the Reregulating Dam that are at or below Natural Thermal Potential ("NTP") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. NTP is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated NTP can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of NTP.

- E. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ standard(s) after a period of required monitoring of dissolved oxygen levels. As of the Effective Date, the SWW has not been operating long enough to determine whether DEQ's 11.0 mg/L or its 9.0 mg/L standard will apply below the Project during the spawning season of the year. As contemplated by the WQMMP, the Joint Licensees conducted three years of intergravel dissolved oxygen ("IGDO") monitoring; but the results were inconclusive, and one more year of IGDO monitoring is needed before this determination can be made.
- F. As contemplated by the WQMMP, the Joint Licensees will take an adaptive management approach in operations of the SWW and attainment of water quality standards. The purpose of this Agreement is to provide a framework for the Joint Licensees to continue to observe temperature and dissolved oxygen levels in the Deschutes River below the Project in order to obtain sufficient information about the operation of the SWW to modify the WQMMP, if necessary, to reflect the temperature and dissolved oxygen standards applicable to that portion of the river.

## **AGREEMENT**

Therefore, the Parties agree as follows:

### **1. Applicable Temperature Standard**

During 2013, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the NTP. During such cooling events, the 7-day average daily maximum discharge temperature below the Reregulating Dam can be up to 0.5°C above NTP for up to 3 days before the Joint Licensees bring discharge temperatures back to the standard of NTP+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 12.0 °C.

### **2. Applicable Dissolved Oxygen Standard**

- a. At all times PGE will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve a dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam.
- b. PGE will continue to monitor IGDO concentrations during 2013 to determine if an IGDO concentration of 8.0 mg/L is maintained in the Deschutes River downstream of the Reregulating Dam by operation of the Project pursuant to Paragraph 2(a). IGDO monitoring in 2013 will follow the same methodology used in the previous three years of monitoring.

### 3. Revision of WQMMP

After one year of operation of the SWW after the Effective Date, the Joint Licensees will meet soon thereafter with DEQ and the CTWS Water Control Board ("WCB") to (i) discuss the applicable temperature and DO standards, and (ii) determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and dissolved oxygen standards DEQ and WCB determine to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary in light of monitoring results, PGE will file a revised WQMMP with FERC and implement the revised WQMMP. In consultation with PGE, DEQ and the WCB will determine, pursuant to OAR 340-048.0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary.

### 4. Relationship to WQMMP

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees obligations under the WQMMP.

### 5. Entire Agreement

This Agreement contains all the terms and conditions agreed upon by the Parties.

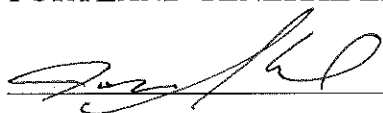
### 6. Modification

Modifications to this Agreement shall be made only by mutual consent of the Parties, by the issuance of a written modification, signed and dated by all Parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

### 7. Effective Date


The Effective Date of this Agreement is the date of the latest signature below.

#### PORTLAND GENERAL ELECTRIC COMPANY

  
\_\_\_\_\_

23 May 13  
Date

#### OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

  
Linda Hayes Gorman  
DEQ Regional Division Administrator

5-21-13  
Date

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE") (collectively, "the Parties"), on behalf of itself as Operator of the Pelton Round Butte Hydroelectric Project (the "Project") located on the Deschutes River in Jefferson County, Oregon, and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together with PGE are the Joint Licensees for the Project.

**RECITALS**

- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP require the Joint Licensees to discharge temperatures at the Reregulating Dam that are at or below Natural Thermal Potential ("NTP") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. NTP is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated NTP can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of NTP.
- E. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ dissolved oxygen standard(s) after a three-year period of required monitoring of water

column and intergravel dissolved oxygen levels. As of the Effective Date, the Joint Licensees have conducted a total of four years of intergravel dissolved oxygen (“IGDO”) monitoring. Based on the four years of data, DEQ has determined that the 9.0 mg/L standard applies below the Project during the spawning season of the year.

- F. When the WQMMP was written, DEQ applied the spawning criterion for dissolved oxygen to the Deschutes River below the Project on a year-round basis. Since that time, the state standard for dissolved oxygen has changed and the spawning criterion only applies from October 15<sup>th</sup> to June 15<sup>th</sup>. The criterion for cold-water aquatic life applies during the rest of the year.
- G. As contemplated by the WQMMP, the Joint Licensees will take an adaptive management approach in operations of the SWW to attain water quality standards. The purpose of this Agreement is to provide a framework for the Joint Licensees to evaluate management and monitoring measures that may be needed to ensure continued compliance with the temperature and dissolved oxygen standards applicable to the Deschutes River below the Project.

## AGREEMENT

Therefore, the Parties agree as follows:

### 1. Applicable Temperature Standard

During 2014, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the NTP. During such cooling events, the 7-day average daily maximum discharge temperature below the Reregulating Dam can be up to 0.5°C above NTP for up to three (3) calendar days before the Joint Licensees bring discharge temperatures back to the standard of NTP+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 12.0°C.

### 2. Applicable Dissolved Oxygen Standard

Because the Joint Licensees collect hourly dissolved oxygen (“D.O.”) data from the Project’s Reregulating Dam water quality monitoring station, DEQ has determined that the Joint Licensees can apply the 30-D, 7-Mi and minimum D.O. values that are specified in Table 21 of DEQ’s D.O. criterion for cold-water aquatic life during the non-spawning season. Accordingly, the Joint Licensees will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve: (i) dissolved oxygen concentrations of 8.0 mg/L (30-D value), 6.5 mg/L (7-Mi value) and 6.0 mg/L (absolute minimum value) in the Deschutes River downstream of the Reregulating Dam during the period from June 16 through October 14; and (ii) an absolute minimum dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam from October 15 through June 15.

### 3. Revision of WQMMP

After one year of operation of the SWW after the Effective Date, the Joint Licensees will meet soon thereafter with DEQ and the CTWS Water Control Board ("WCB") to (i) discuss the applicable temperature and D.O. standards, and (ii) determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and D.O. standards DEQ and WCB determine to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary in light of monitoring results, upon approval by DEQ and WCB, PGE will (i) file a revised WQMMP with FERC and, upon FERC approval, (ii) implement the revised WQMMP. In consultation with PGE, DEQ and the WCB will determine, pursuant to OAR 340-048-0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary.

### 4. Relationship to WQMMP

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees' obligations under the WQMMP.

### 5. Entire Agreement

This Agreement contains all the terms and conditions agreed upon by the Parties.

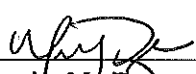
### 6. Modification


Modifications to this Agreement shall be made only by mutual consent of the Parties, by the issuance of a written modification, signed and dated by all Parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

### 7. Effective Date

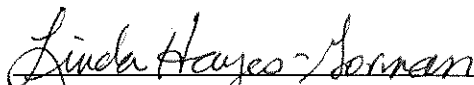
The Effective Date of this Agreement is the latest date of the signature dates below.

#### PORTLAND GENERAL ELECTRIC COMPANY

  
\_\_\_\_\_  
**Maria M. Pope**  
SRVP Power Supply &  
Operations & Resource Strategy

 5/15/2014  
Date

#### OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

  
\_\_\_\_\_  
**Linda Hayes Gorman**  
DEQ Regional Division Administrator

5-27-14  
Date

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE") (collectively, "the Parties"), on behalf of itself as Operator of the Pelton Round Butte Hydroelectric Project (the "Project") located on the Deschutes River in Jefferson County, Oregon, and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together with PGE are the Joint Licensees for the Project.

**RECITALS**

- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP establish management measures for the Joint Licensees to achieve discharge temperatures at the Reregulating Dam that are at or below the temperature that would occur at that location without the project ("WPT") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. WPT is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated WPT can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of WPT + 0.25°F.
- E. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ dissolved oxygen standard(s) after a three-year period of required monitoring of water

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column and intergravel dissolved oxygen (“IGDO”) levels. In early 2013, the Parties decided that additional data collection was needed. Based on the four years of data, DEQ has determined that the 9.0 mg/L standard applies below the Project during the spawning season of the year.

- F. The WQMMP applies the spawning criterion for dissolved oxygen to the Deschutes River below the Project on a year-round basis. Under the state standard for dissolved oxygen, however, the spawning criterion only applies from October 15<sup>th</sup> to June 15<sup>th</sup>. The criterion for cold-water aquatic life applies during the rest of the year.
- G. As contemplated by the WQMMP, the Joint Licensees will take an adaptive management approach in operations of the SWW to attain water quality standards. The purpose of this Agreement is to provide a framework for the Joint Licensees to evaluate management and monitoring measures that may be needed to ensure continued compliance with the temperature and dissolved oxygen standards applicable to the Deschutes River below the Project.

## AGREEMENT

Therefore, the Parties agree as follows:

### 1. Applicable Temperature Standard

During 2015, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the WPT. During such cooling events, the blending operations at the SWW may target a 7-day average daily maximum discharge temperature below the Reregulating Dam of up to 0.5°C above WPT for up to three (3) calendar days. Thereafter, the targeted 7-day average daily maximum discharge temperature will be no more than WPT+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 13.0°C.

### 2. Applicable Dissolved Oxygen Standard

Because the Joint Licensees collect hourly dissolved oxygen (“D.O.”) data from the Project’s Reregulating Dam water quality monitoring station, DEQ has determined that the Joint Licensees can apply the 30-D, 7-Mi and minimum D.O. values that are specified in Table 21 of DEQ’s D.O. criterion for cold-water aquatic life during the non-spawning season. Accordingly, the Joint Licensees will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve: (i) dissolved oxygen concentrations of at least 8.0 mg/L (30-D value), 6.5 mg/L (7-Mi value) and 6.0 mg/L (absolute minimum value) in the Deschutes River downstream of the Reregulating Dam during the period from June 16 through October 14; and (ii) an absolute minimum dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam from October 15 through June 15.

### 3. Revision of WQMMP

After one year of operation of the SWW after the Effective Date, the Joint Licensees will meet soon thereafter with DEQ and the CTWS Water Control Board ("WCB") to (i) discuss the applicable temperature and D.O. standards, and (ii) determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and D.O. standards DEQ and WCB determine to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary in light of monitoring results, upon approval by DEQ and WCB, PGE will (i) file a revised WQMMP with FERC and, upon FERC approval, (ii) implement the revised WQMMP. In consultation with PGE, DEQ and the WCB will determine, pursuant to OAR 340-048-0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary. The Parties acknowledge and agree that no provision of this Agreement waives or alters DEQ's authority to modify or revoke the Project's state 401 certification, which includes the WQMMP, in accordance with applicable law.

### 4. Relationship to WQMMP

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees' obligations under the WQMMP.

### 5. Entire Agreement

This Agreement contains all the terms and conditions agreed upon by the Parties.

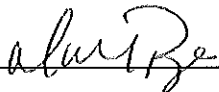
### 6. Modification

Modifications to this Agreement shall be made only by mutual consent of the Parties, by the issuance of a written modification, signed and dated by all Parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

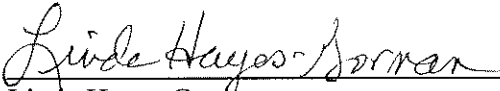
### 7. Effective Date

The Effective Date of this Agreement is the latest date of the signature dates below.

#### PORTLAND GENERAL ELECTRIC COMPANY

  
\_\_\_\_\_  
Date 5/14/2015

#### OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

  
\_\_\_\_\_  
Linda Hayes Gorman  
DEQ Regional Division Administrator  
Date 5/4/15

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE") (collectively, "the Parties"), on behalf of itself as Operator of the Pelton Round Butte Hydroelectric Project (the "Project") located on the Deschutes River in Jefferson County, Oregon, and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together with PGE are the Joint Licensees for the Project.

**RECITALS**

- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP establish management measures for the Joint Licensees to achieve discharge temperatures at the Reregulating Dam that are at or below the temperature that would occur at that location without the project ("WPT") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. WPT is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated WPT can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of WPT + 0.25°F.
- E. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ dissolved oxygen standard(s) after a three-year period of required monitoring of water

column and intergravel dissolved oxygen (“IGDO”) levels. In early 2013, the Parties decided that additional data collection was needed. Based on the four years of data, DEQ has determined that the 9.0 mg/L standard applies below the Project during the spawning season of the year.

- F. The WQMMP applies the spawning criterion for dissolved oxygen to the Deschutes River below the Project on a year-round basis. Under the state standard for dissolved oxygen, however, the spawning criterion only applies from October 15<sup>th</sup> to June 15<sup>th</sup>. The criterion for cold-water aquatic life applies during the rest of the year.
- G. As contemplated by the WQMMP, the Joint Licensees will take an adaptive management approach in operations of the SWW to attain water quality standards. The purpose of this Agreement is to provide a framework for the Joint Licensees to evaluate management and monitoring measures that may be needed to ensure continued compliance with the temperature and dissolved oxygen standards applicable to the Deschutes River below the Project.
- H. The CTWS Water Control Board (“WCB”) is currently reviewing its water quality standards and within the next year may be proposing to revise its standards related to temperature and dissolved oxygen.

## AGREEMENT

Therefore, the Parties agree as follows:

### 1. Applicable Temperature Standard

During 2016, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the WPT. During such cooling events, the blending operations at the SWW may target a 7-day average daily maximum discharge temperature below the Reregulating Dam of up to 0.5°C above WPT for up to three (3) calendar days. Thereafter, the targeted 7-day average daily maximum discharge temperature will be no more than WPT+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 13.0°C.

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Because the Joint Licensees collect hourly dissolved oxygen (“D.O.”) data from the Project’s Reregulating Dam water quality monitoring station, DEQ has determined that the Joint Licensees can apply the 30-D, 7-Mi and minimum D.O. values that are specified in Table 21 of DEQ’s D.O. criterion for cold-water aquatic life during the non-spawning season. Accordingly, the Joint Licensees will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve: (i) dissolved oxygen concentrations of at least 8.0 mg/L (30-D value), 6.5 mg/L (7-Mi value) and 6.0 mg/L (absolute minimum value) in the Deschutes River downstream of the Reregulating Dam during the period from June 16 through October 14; and

(ii) an absolute minimum dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam from October 15 through June 15.

### **3. Revision of WQMMP**

In order to accommodate the CTWS WCB's review and potential revision of its applicable temperature and dissolved oxygen standards, one year after the Effective Date of this Agreement, the Joint Licensees will promptly meet with DEQ and the CTWS WCB to discuss the applicable temperature and D.O. standards. In consultation with PGE, DEQ will determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and D.O. standards DEQ determines to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary, upon approval by DEQ, PGE will (i) file a revised WQMMP with FERC and, upon FERC approval, (ii) implement the revised WQMMP. In consultation with PGE, DEQ will determine, pursuant to OAR 340-048-0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary. The Parties acknowledge and agree that no provision of this Agreement waives or alters DEQ's authority to modify or revoke the Project's state 401 certification, which includes the WQMMP, in accordance with applicable law.

### **4. Relationship to WQMMP**

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees' obligations under the WQMMP.

### **5. Entire Agreement**

This Agreement contains all the terms and conditions agreed upon by the Parties.

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Modifications to this Agreement shall be made only by mutual consent of the Parties, by the issuance of a written modification, signed and dated by all Parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

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**7. Effective Date**

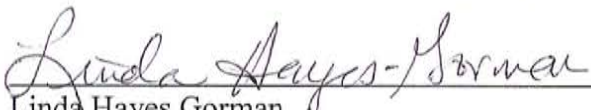
The Effective Date of this Agreement is the latest date of the signature dates below. This Agreement expires fifteen months from the latest date of the signature dates below.

**PORTLAND GENERAL ELECTRIC COMPANY**

  
\_\_\_\_\_  
**Maria M. Pope**  
SRVP Power Supply &  
Operations & Resource Strategy

*ms* 4/18/2016  
Date

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
\_\_\_\_\_  
**Linda Hayes Gorman**  
DEQ Regional Division Administrator

3/31/2016  
Date

**SECTION 401  
INTERIM AGREEMENT  
For the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

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- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP establish management measures for the Joint Licensees to achieve discharge temperatures at the Reregulating Dam that are at or below the temperature that would occur at that location without the project ("WPT") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. WPT is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated WPT can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of WPT + 0.25°F.
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column and intergravel dissolved oxygen (“IGDO”) levels. In early 2013, the Parties decided that additional data collection was needed. Based on the four years of data, DEQ has determined that the 9.0 mg/L standard applies below the Project during the spawning season of the year.

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- H. The CTWS Water Control Board (“WCB”) is currently reviewing its water quality standards and within the next year may be proposing to revise its standards related to temperature and dissolved oxygen.

## **AGREEMENT**

Therefore, the Parties agree as follows:

### **1. Applicable Temperature Standard**

During 2017, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the WPT. During such cooling events, the blending operations at the SWW may target a 7-day average daily maximum discharge temperature below the Reregulating Dam of up to 0.5°C above WPT for up to three (3) calendar days. Thereafter, the targeted 7-day average daily maximum discharge temperature will be no more than WPT+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 13.0°C.

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### **3. Revision of WQMMP**

In order to accommodate the CTWS WCB's review and potential revision of its applicable temperature and dissolved oxygen standards, one year after the Effective Date of this Agreement, the Joint Licensees will promptly meet with DEQ and the CTWS WCB to discuss the applicable temperature and D.O. standards. In consultation with PGE, DEQ will determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and D.O. standards DEQ determines to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary, upon approval by DEQ, PGE will (i) file a revised WQMMP with FERC and, upon FERC approval, (ii) implement the revised WQMMP. In consultation with PGE, DEQ will determine, pursuant to OAR 340-048-0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary. The Parties acknowledge and agree that no provision of this Agreement waives or alters DEQ's authority to modify or revoke the Project's state 401 certification, which includes the WQMMP, in accordance with applicable law.

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**7. Effective Date**

The Effective Date of this Agreement is the latest date of the signature dates below. This Agreement expires fifteen months from the latest date of the signature dates below.

**PORTLAND GENERAL ELECTRIC COMPANY**

  
\_\_\_\_\_  
Maria M. Pope  
SRVP Power Supply &  
Operations & Resource Strategy

 7/16/2017  
\_\_\_\_\_  
Date

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
\_\_\_\_\_  
Linda Hayes Gorman  
DEQ Regional Division Administrator

7/20/2017  
\_\_\_\_\_  
Date

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**For the**  
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Therefore, the Parties agree as follows:

### **1. Applicable Temperature Standard**

During 2017, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the WPT. During such cooling events, the blending operations at the SWW may target a 7-day average daily maximum discharge temperature below the Reregulating Dam of up to 0.5°C above WPT for up to three (3) calendar days. Thereafter, the targeted 7-day average daily maximum discharge temperature will be no more than WPT+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 13.0°C.

### **2. Applicable Dissolved Oxygen Standard**

Because the Joint Licensees collect hourly dissolved oxygen (“D.O.”) data from the Project’s Reregulating Dam water quality monitoring station, DEQ has determined that the Joint Licensees can apply the 30-D, 7-Mi and minimum D.O. values that are specified in Table 21 of DEQ’s D.O. criterion for cold-water aquatic life during the non-spawning season. Accordingly, the Joint Licensees will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve: (i) dissolved oxygen concentrations of at least 8.0 mg/L (30-D value), 6.5 mg/L (7-Mi value) and 6.0 mg/L (absolute minimum value) in the Deschutes River downstream of the Reregulating Dam during the period from June 16 through October 14; and

(ii) an absolute minimum dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam from October 15 through June 15.

### **3. Revision of WQMMP**

In order to accommodate the CTWS WCB's review and potential revision of its applicable temperature and dissolved oxygen standards, one year after the Effective Date of this Agreement, the Joint Licensees will promptly meet with DEQ and the CTWS WCB to discuss the applicable temperature and D.O. standards. In consultation with PGE, DEQ will determine whether PGE should file a revised WQMMP that incorporates the measures needed to satisfy the temperature and D.O. standards DEQ determines to be applicable in the Deschutes River below the Reregulating Dam. If determined to be necessary, upon approval by DEQ, PGE will (i) file a revised WQMMP with FERC and, upon FERC approval, (ii) implement the revised WQMMP. In consultation with PGE, DEQ will determine, pursuant to OAR 340-048-0050, whether modification to the § 401 Certification to include the revised WQMMP is necessary. The Parties acknowledge and agree that no provision of this Agreement waives or alters DEQ's authority to modify or revoke the Project's state 401 certification, which includes the WQMMP, in accordance with applicable law.

### **4. Relationship to WQMMP**

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees' obligations under the WQMMP.

### **5. Entire Agreement**

This Agreement contains all the terms and conditions agreed upon by the Parties.

### **6. Modification**

Modifications to this Agreement shall be made only by mutual consent of the Parties, by the issuance of a written modification, signed and dated by all Parties, prior to any changes being effective; provided, DEQ reserves all authorities to administer and enforce the § 401 certification and water quality standards as provided under applicable law.

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**7. Effective Date**


The Effective Date of this Agreement is the latest date of the signature dates below. This Agreement expires fifteen months from the latest date of the signature dates below.

**PORTLAND GENERAL ELECTRIC COMPANY**

  
\_\_\_\_\_  
Maria M. Pope  
SRVP Power Supply &  
Operations & Resource Strategy

 7/16/2017  
\_\_\_\_\_  
Date

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
\_\_\_\_\_  
Linda Hayes Gorman  
DEQ Regional Division Administrator

7/20/2017  
\_\_\_\_\_  
Date

**SECTION 401**  
**INTERIM AGREEMENT**  
**For the**  
**PELTON ROUND BUTTE HYDROELECTRIC PROJECT**

This Interim Agreement ("Agreement") is entered on the Effective Date between the Oregon Department of Environmental Quality ("DEQ") and Portland General Electric Company ("PGE") (collectively, "the Parties"), on behalf of itself as Operator of the Pelton Round Butte Hydroelectric Project (the "Project") located on the Deschutes River in Jefferson County, Oregon, and the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS"), who together with PGE are the Joint Licensees for the Project.

**RECITALS**

- A. DEQ is the state agency charged with administering and enforcing state law regarding water quality. On June 24, 2002, DEQ issued a water quality certification under Section 401 of the federal Clean Water Act, 33 U.S.C. §1341 ("§ 401 Certification") for the Project. Soon thereafter, the Environmental Quality Commission modified water quality standards before the current FERC license was issued. Thereafter, on June 21, 2005, the Federal Energy Regulatory Commission ("FERC") issued a new 50-year license for the Project.
- B. Condition A of the § 401 Certification requires the Joint Licensees to implement a Water Quality Management and Monitoring Plan ("WQMMP") to satisfy the requirements of the § 401 Certification. Section 2 of the WQMMP is a Water Temperature Management Plan. Section 3 of the WQMMP is a Dissolved Oxygen Management Plan. Section 4 of the WQMMP is a pH Management Plan. Section 5 of the WQMMP is a Nuisance Phytoplankton Growth Management Plan. The Joint Licensees have been implementing each of these management plans, since the new license was issued, in accordance with Condition A of the § 401 Certification.
- C. Since December 2009, the Joint Licensees have been operating a Selective Water Withdrawal facility ("SWW") at the Round Butte Dam to manage temperature, dissolved oxygen, and pH, and to facilitate downstream passage of migrating salmonids.
- D. The § 401 Certification and the WQMMP establish management measures for the Joint Licensees to achieve discharge temperatures at the Reregulating Dam that are at or below the temperature that would occur at that location without the project ("WPT") + 0.25°F when the combined inflows to Lake Billy Chinook are greater than 10°C. WPT is calculated using a regression equation that inputs the flow-weighted, 7-day average daily maximum temperatures of the three major tributaries to Lake Billy Chinook, and the 7-day average daily air temperature at the Redmond Airport. If the weather cools suddenly, and the maximum daily temperatures of the three upstream tributaries suddenly decline, the calculated WPT can decrease before the cooler water reaches the Reregulating Dam, which may lead to an exceedance of WPT + 0.25°F.

- E. The Dissolved Oxygen Management Plan contemplates determination of the applicable DEQ dissolved oxygen standard(s) after a three-year period of required monitoring of water column and intergravel dissolved oxygen (“IGDO”) levels. In early 2013, the Parties decided that additional data collection was needed. Based on the four years of data, DEQ has determined that the 9.0 mg/L standard applies below the Project during the spawning season of the year.
- F. The WQMMP applies the spawning criterion for dissolved oxygen to the Deschutes River below the Project on a year-round basis. Under the state standard for dissolved oxygen, however, the spawning criterion only applies from October 15<sup>th</sup> to June 15<sup>th</sup>. The criterion for cold-water aquatic life applies during the rest of the year.
- G. As contemplated by the WQMMP, the Joint Licensees will take an adaptive management approach in operations of the SWW to attain water quality standards. The purpose of this Agreement is to provide a framework for the Joint Licensees to evaluate management and monitoring measures that may be needed to ensure continued compliance with the temperature and dissolved oxygen standards applicable to the Deschutes River below the Project. To assist in this evaluation, PGE commissioned a water quality study for the Project and the Lower Deschutes River that includes the development of a new water quality model to assess the water quality effects of potential revisions to Project operations. PGE publicly released the study on June 20, 2019 and will discuss the results of the study and their implications for management of the Project with DEQ, the CTWS, other members of the Pelton Round Butte Fish Committee, and the public during the remaining months of 2019. In particular, PGE expects that a discussion of the study and its implications will be an agenda item for the August 15, October 12, and December 12, 2019 Fish Committee meetings.
- H. The CTWS Water Control Board (“WCB”) is currently revising its water quality standards and anticipates submitting the revised standards to EPA for approval, including revised temperature and dissolved oxygen standards for the Deschutes River below the Project.

## AGREEMENT

Therefore, the Parties agree as follows:

### 1. Applicable Temperature Standard

During the term of this Agreement, PGE will attempt to anticipate cooling events based on weather forecasts, and to increase the percentage of cooler water in the water released by the SWW to match the anticipated decline in the WPT. During such cooling events, the blending operations at the SWW may target a 7-day average daily maximum discharge temperature below the Reregulating Dam of up to 0.5°C above WPT for up to three (3) calendar days. Thereafter, the targeted 7-day average daily maximum discharge temperature will be no more than WPT+0.3°C. PGE will begin blending operations at the SWW when the increasing discharge temperature below the Reregulating Dam approaches 13.0°C.



## **2. Applicable Dissolved Oxygen Standard**

Because the Joint Licensees collect hourly dissolved oxygen (“D.O.”) data from the Project’s Reregulating Dam water quality monitoring station, DEQ has determined that the Joint Licensees can apply the 30-D, 7-Mi and minimum D.O. values that are specified in Table 21 of DEQ’s D.O. criterion for cold-water aquatic life during the non-spawning season. Accordingly, the Joint Licensees will operate the Project pursuant to the terms of the Dissolved Oxygen Management Plan to achieve: (i) dissolved oxygen concentrations of at least 8.0 mg/L (30-D value), 6.5 mg/L (7-Mi value) and 6.0 mg/L (absolute minimum value) in the Deschutes River downstream of the Reregulating Dam during the period from June 16 through October 14; and (ii) an absolute minimum dissolved oxygen concentration of 9.0 mg/L (or 95% saturation) in the Deschutes River downstream of the Reregulating Dam from October 15 through June 15.

## **3. Revision of WQMMP**

In order to accommodate the evaluation of the water quality study conducted by PGE as well as the CTWS WCB’s revision of its applicable temperature and dissolved oxygen standards, the Joint Licensees will meet with DEQ and the CTWS WCB to discuss the applicable temperature and D.O. standards and potential revisions to the WQMMP within two months after the Effective Date. By December 20, 2019, PGE will submit to DEQ proposed modifications to the Temperature Management Plan, Dissolved Oxygen Management Plan, and other components of the WQMMP that the Joint Licensees believe are adequate to provide reasonable assurance that the proposed activities may be conducted in a manner that will not violate the applicable temperature and D.O. standards, consistent with their consultations with DEQ, the CTWS WCB, and other members of the Fish Committee. DEQ and PGE may agree in writing to extend the December 20, 2019, deadline if the CTWS WCB proposes revised water quality standards for the Deschutes River that are materially different than DEQ’s, if relevant comments from the Fish Committee or other stakeholders require additional time to address, or for any other appropriate reason. Following receipt of the Joint Licensees’ proposed revisions to the WQMMP and any further consultation DEQ deems necessary, if any, DEQ will modify the certification in accordance with OAR 340-048-0050. Following DEQ’s issuance of any final certification decision, the Joint Licensees will (i) file with FERC a revised certification, including as applicable a revised WQMMP, if any, and, upon FERC approval, (ii) implement the certification in accordance with its terms, including the revised WQMMP, if any. Nothing in this Agreement, however, limits any right PGE or CTWS may have to challenge any modification to, or revocation of, the certification, including the WQMMP.

## **4. Relationship to WQMMP**

This Agreement does not otherwise affect, modify, or supersede the Joint Licensees’ obligations under the WQMMP. The Parties acknowledge and agree that no provision of this Agreement waives or alters DEQ’s authority to modify or revoke the Project’s state 401 certification, which includes the WQMMP, in accordance with applicable law.



## APPENDIX A

### Oregon Division of Environmental Quality Section 401 of the Clean Water Act Terms and Conditions

#### A. Water Quality Management and Monitoring Plan

Within 90 days of issuance of the §401 certification, the Joint Applicants, in consultation with ODEQ, shall revise the Water Quality Management and Monitoring Plan attached to these certification conditions as Exhibit A and submit the revised plan to ODEQ for approval.<sup>73</sup> The plan as approved by ODEQ is hereafter referred to in these certification conditions as the "WQMMP." Upon ODEQ approval, the WQMMP becomes a part of the §401 certification for the Project for purposes of any federal license or permit thereafter issued.

#### B. Selective Water Withdrawal Facility Construction and Operation

By no later than five years from the date of receiving a new FERC license for the Project, the Joint Applicants shall construct, test, and commence operation of the Selective Water Withdrawal (SWW) facility described in the Joint Applicants' §401 application.

#### C. Temperature

1. The SWW facility shall be operated in accordance with the Temperature Management Plan (TMP) contained in the WQMMP. The TMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of water quality standard criteria for temperature.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters affected by the Project, (b) the success of the TMP in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.

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<sup>73</sup> The revised Water Quality Management and Monitoring Plan (WQMMP) has been completed by the licensees and can be found in Appendix C of this license.

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3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for temperature in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the Joint Applicants' TMP in light of information acquired since the certification of the Project. If additional temperature reduction measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised TMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of the attached Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related thermal contributions to waters affected by the Project.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for temperature in waters affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the TMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the TMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the TMP to determine whether additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary and feasible. If additional measures are necessary and feasible, ODEQ may require submittal of a revised TMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the TMP that would require the Project to reduce water temperatures beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.
- (d) If (i) additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary to achieve the LA but the measures are not feasible, and (ii) the water quality standard has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken by all required parties within the Deschutes River Basin to achieve the TMDL for waters affected by the Project. If all feasible measures have not been undertaken, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that

all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the TMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the TMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the TMP to require additional temperature measures, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the TMP that would require the Project to reduce water temperatures beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. Any Project-related instream temperature increase of 0.25°F or less above the relevant criterion shall not be deemed to contribute to an exceedance of the temperature criterion or to a violation of the temperature water quality standard.

6. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the TMP require or indicate a need for modification to the WQMP.

7. With the approval of ODEQ, the Joint Applicants may cease implementing the TMP and WQMP or may implement a modified TMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for temperature and will not contribute to the exceedance of the relevant temperature criterion in waters affected by the Project.

8. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

**D. Dissolved Oxygen**

1. The SWW facility shall be operated in accordance with the Dissolved Oxygen Management Plan (DOMP) contained in the WQMMP. The DOMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to violations of water quality standard criteria for dissolved oxygen.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the dissolved oxygen monitoring reasonably needed to determine (a) whether the dissolved oxygen criteria continue to be violated in waters affected by the Project, (b) the success of the DOMP in reducing the Project's contribution to any continued violations of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to violations of the criteria.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for dissolved oxygen in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the DOMP in light of information acquired since the certification of the Project. If additional dissolved oxygen improvement measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised DOMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related impacts on dissolved oxygen concentrations in waters affected by the Project.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for dissolved oxygen in waters affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the DOMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the DOMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the DOMP to determine whether additional measures to reduce the Project's contribution to exceedances of the dissolved oxygen criteria are necessary and feasible. If additional measures

are necessary and feasible, ODEQ may require submittal of a revised DOMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the DOMP that would require the Project to increase dissolved oxygen concentrations beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.

- (d) If (i) additional measures to reduce the Project's contribution to violations of the dissolved oxygen criteria are necessary to achieve the LA but the measures are not feasible, and (ii) the water quality standard for dissolved oxygen has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken within the Deschutes River Basin to achieve the LA for waters affected by the Project. If all feasible measures have not been undertaken by all required parties, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the DOMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the DOMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the DOMP to require additional dissolved oxygen measures, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the DOMP that would require the Project to increase dissolved oxygen concentrations beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the DOMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the DOMP and WQMP or may implement a modified DOMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for dissolved oxygen and will not contribute to violation of dissolved oxygen criteria in waters affected by the Project.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

**E. Hydrogen Ion Concentration (pH)**

1. The SWW facility shall be operated in accordance with the pH Management Plan (PHMP) contained in the WQMMP. In accordance with Oregon Administrative Rule (OAR) 340-041-0565(2Xd), the PHMP shall identify those measures (including "all practicable measures" in impoundments) that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of the water quality criterion for pH.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the pH monitoring reasonably needed to determine (a) whether the pH criterion continue to be exceeded in waters affected by the Project, (b) the success of the PHMP in reducing the Project's contribution to any continued exceedances of the criterion, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criterion.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for pH in waters affected by the Project, ODEQ may reevaluate the PHMP in light of information acquired since the certification of the Project. If additional pH measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised PHMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related pH contributions to waters affected by the Project.



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4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for pH in waters affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the PHMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the PHMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the PHMP to determine whether additional measures to reduce the Project's contribution to exceedances of the pH criterion are necessary and feasible. If additional measures are necessary and feasible, ODEQ may require submittal of a revised PHMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the PHMP that would require the Project to reduce pH beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.
- (d) If (i) additional measures to reduce the Project's contribution to exceedances of the pH criterion are necessary to achieve the LA but the measures are not feasible, and (ii) the pH water quality standard has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken by all required parties within the Deschutes River Basin to achieve the TMDL for waters affected by the Project. If all feasible measures have not been undertaken, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the PHMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the PHMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the PHMP to require additional pH measures, subject to the

limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the PHMP that would require the Project to reduce pH beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the PHMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the PHMP and WQMP or may implement a modified PHMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for pH and will not contribute to the exceedance of the relevant pH criterion in waters affected by the Project.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

**F. Nuisance Phytoplankton Growth and Aesthetic Conditions**

1. The SWW facility shall be operated in accordance with the Nuisance Phytoplankton Growth Management Plan (NPGMP) contained in the WQMMP. The NPGMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of the nuisance phytoplankton growth standard criteria in the event nuisance conditions develop.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the nuisance phytoplankton growth monitoring reasonably needed to determine (a) whether the nuisance phytoplankton trigger criterion is exceeded in the Project reservoirs, (b) the success of the NPGMP in reducing the Project's contribution to excessive phytoplankton levels that might lead to nuisance conditions within the Project reservoirs, and (c) any additional measures that may be needed to reduce the Project's contribution to nuisance phytoplankton conditions.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for nuisance phytoplankton growth in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the NPGMP in light of information acquired since the certification of the Project. If additional nuisance phytoplankton growth reduction measures are technically and economically practicable and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised NPGMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related impacts to nuisance phytoplankton growth within the Project reservoirs.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for nuisance phytoplankton growth in the portion of the Deschutes River affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the NPGMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the NPGMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the NPGMP to determine whether additional measures to reduce the Project's contribution to exceedances of the nuisance phytoplankton growth criteria are technically and economically practicable and necessary. If additional measures are technically and economically practicable and necessary, ODEQ may require submittal of a revised NPGMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the NPGMP that would require the Project to reduce nuisance phytoplankton growth beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the NPGMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the NPGMP and WQMP or may implement a modified NPGMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for nuisance phytoplankton growth and will not contribute to the exceedance of the relevant nuisance phytoplankton growth criteria in the Project reservoirs.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

**G. Biological Criteria, Deleterious Conditions, and Protection of Designated Beneficial Uses of Salmonid Spawning, Salmonid Rearing, Resident Fish, Aquatic Life, and Wildlife, and other water quality-related state laws for the protection of fish, aquatic life and wildlife:**

1. **SWW Facility:** The Joint Applicants shall operate the Selective Water Withdrawal (SWW) facility in accordance with conditions C, D, and E of this certification.

2. **Monitoring:** Upon issuance of a new FERC license for the Project, the Joint Applicants shall conduct all monitoring, record keeping, and reporting of all parameters in accordance with the WQMP contained in the WQMMP. The WQMP shall specify monitoring sufficient to determine compliance with § 401 certification requirements for water quality, Project operations, streamflow, ramping rates, and reservoir levels.

3. **Spill Management:** The Joint Applicants shall maintain and implement current Spill Prevention, Control, and Countermeasure (SPCC) plans for oil and hazardous materials prepared in accordance with the Clean Water Act requirements of 40 CFR 112. These plans shall address all locations at the Project where Project operations may potentially result in a spill of these materials to the reservoirs or the lower

Deschutes River. In the event of a spill or release or threatened spill or release to Project reservoirs or the lower Deschutes River, the Joint Applicants shall immediately implement the site's SPCC plans and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

4. **Ramping Rates in the lower Deschutes River:** The Joint Applicants shall operate the project with the following criteria for ramping rates: 0.1 foot/hour and 0.4 foot/day from October 16 to May 14, and 0.05 foot/hour and 0.2 foot/day from May 15 to October 15, except during certain extraordinary conditions. These extraordinary conditions are: (1) flood events; (2) any event that triggers the Project Emergency Action Plan; (3) rapid changes in Project inflows, when the rate of inflow change exceeds the proposed stage change limits; and (4) equipment failures or emergencies at the Reregulating Development. To monitor compliance with this requirement, the Joint Applicants shall record the time and control signal value for all state change instructions at the Reregulating Development and shall report any control signal changes that are greater than the ramping limitations identified above.

5. **Reservoir Levels:** The Joint Applicants shall operate Lake Billy Chinook to maintain a stable pool level between 1,944 ft. mean sea level (MSL) and 1,945 ft. MSL during the period June 15 to September 15 of each year. If it is forecasted that Lake Billy Chinook will not fill by June 15 of any year, then the Joint Applicants shall immediately notify the state Hydroelectric Application Review Team (HART) and advise of the expected refill date. If the reservoir has not been filled to normal operating pool level by June 15 of any year, this provision shall not prevent filling if water is available for storage while maintaining the minimum flow. Except during certain extraordinary circumstances described below, the Joint Applicants shall restrict the drawdown of Lake Billy Chinook to a maximum of 20 ft (elevation 1,925 ft MSL) with a target of 10 feet drawdown during normal winter operations; Lake Simtustus to a maximum drawdown limit of elevation of 1,576 ft MSL between June 1 and August 31, and elevation 1,573 ft MSL between September 1 and May 31; and the Reregulating Reservoir to 1,414 ft MSL year-round. Extraordinary circumstances allowing deviation from maximum allowable drawdowns are: (a) flood events in which drawdown is needed for safe passage of flood flows to minimize damage to life and property; (b) unforeseen occurrences in which drawdown is required to complete emergency repairs on Project facilities; (c) periodic scheduled maintenance activities that require drawdown to complete normal repairs on Project facilities (including spillway gates, the intake structure, or other dam structures); and (d) regional power system emergencies. In instances where the Joint Applicants exceed maximum drawdowns, the Joint Applicants shall provide immediate written justification to FERC and notification to HART describing cause and need for the deviation, extent of deviation, and expected timeline for bringing the reservoir(s) back to minimum allowable pool levels. If the pool level of Lake Billy Chinook is projected to be below the summer operating level (minimum elevation 1,944.0 ft MSL) between June 15 and September 15, the Joint Applicants may reduce the flow release to ensure the

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reservoir reaches the minimum pool elevation of 1944.0 ft MSL. When inflows to the Project under this condition are less than target flows plus 150 cfs, then the flow release at the USGS Madras Gage No.14092500 shall be defined as the daily inflow less 150 cfs. The referenced target flows are defined in the next condition.

6. **Minimum Streamflows:** The Joint Applicants shall maintain minimum flows on a weekly basis equal to specified target flows or inflows, whichever is less. The target flows, as measured at the USGS Madras Gage No.14092500, are as follows: January 4,500 cfs, February 4,500 cfs, March 4,500 cfs, April 4,000 cfs, May 4,000 cfs, June 4,000 cfs, July 4,000 cfs, August 3,500 cfs, September 3,800 cfs, October 3,800 cfs, November 3,800 cfs, and December 4,500 cfs. During the period September 16 through November 15, the Joint Applicants shall supplement inflows as necessary to ensure a minimum flow release to the lower river of at least 3,000 cfs, subject to a maximum required supplementation of 200 cfs and cap on required drawdown of Lake Billy Chinook to achieve such supplementation equal to four feet.

7. **Run-of-River Operations:** The Joint Applicants shall hold river flows below the Reregulating Development to within  $\pm 10$  percent of the measured Project inflow under most conditions. Conditions or events where these criteria may not be followed include days with measured inflow in excess of 6,000 cfs when at least one of the following conditions exists: (1) any event that triggers the Project Emergency Action Plan; (2) power emergencies, as defined in the WSCC Minimum Operating Reliability Criteria (March 8, 1999); (3) equipment failures or emergencies at one of the Project dams or powerplants; or (4) reservoir drawdowns are needed for safe passage of anticipated flood flows to minimize damage to life and property. At times when flows are in excess of 6,000 cfs and one or more of the above exception conditions apply, the Joint Applicants shall minimize the variation beyond the  $\pm 10\%$  criterion as can be done safely.

8. **Stream Gaging:** By no later than one year from the date of receiving a new FERC license for the Project, the Joint Applicants shall fund improvements at the existing USGS gaging stations on the Crooked (Gage No.14087400), Deschutes (Gage No.14076500) and Metolius (Gage No.14091500) rivers upstream of the Project. These improvements shall include radio, telephone, or other telemetry systems to provide recording and transmission of hourly stream temperature and streamflow data to the Pelton control room.

9. **Fish Passage:** The Joint Applicants shall construct, maintain and operate, or shall arrange for the construction, maintenance and operation of such facilities and equipment for fish migration, propagation or conservation consistent with the proposed Fish Passage Plan and amendments thereto. In the event any modifications in the fish

facilities are deemed necessary, the Joint Applicants shall cooperate with Oregon Department of Fish and Wildlife (ODFW) in the design of such modifications or operation of the facilities.

10. **Large Wood:** All large wood (greater than 20 cm by 3 m) entering Lake Billy Chinook shall be removed by the Joint Applicants and placed into the lower Deschutes River below the Reregulating Dam. Following a flow event that results in the transport of significant amounts of large wood into Lake Billy Chinook, the Joint Applicants shall consult with ODFW and the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWS) Natural Resources Department to obtain specific guidance pertaining to the placement and monitoring of that large wood in the lower Deschutes River below the Project's Reregulating Dam. The Joint Applicants shall obtain all necessary regulatory licenses, permits, or approvals from tribal, federal, state and local authorities prior to large wood placement.

11. **Sediment Transport/Spawning Gravel:** The Joint Applicants shall perform the following studies with regard to sediment transport and spawning gravel:

- Verify the sediment transport model developed by Fassnacht (1998) by placing radio-tagged and/or colored rocks on selected bars in the Deschutes River below the Reregulating Dam. Determine at which flow levels these rocks are mobilized by checking their positions after each flow event greater than 7,000 cfs. The Joint Applicants may submit to ODEQ for approval a proposal for an alternate flow value for commencement of this monitoring pending the results of the AIR process. Buried columns of colored rocks will be utilized to determine the depth of scour at different flow levels.
- Resurvey channel cross sections at five locations utilized by Fassnacht (1998). Resurvey these annually for 5 years to determine if there is any active channel change associated with years having high flow events. If no change is detected after 5 years, resurvey them every 10 years, or after events greater than 15,000 cfs.
- If monitoring sediment transport and channel change shows significant transport or change at flows lower than predicted by Fassnacht (1998), initiate a program to measure actual bedload transport at different flow levels at the Warm Springs Bridge (US Highway 26).

- If monitoring of channel change and measuring bedload shows significant transport at levels significantly below those predicted by the geomorphology study, revisit the sites used by McClure (1998) for particle size measurements and replicate these particle surveys.
- Coordinate and lead a study of historical fish counts and spawning data directed toward determination of the cause of anadromous spawning reduction in the Lower Deschutes River from below the Reregulation Dam downstream to the mouth of Shitike Creek. In addition, the Joint Applicants shall conduct a study to determine the quality of gravel habitat for anadromous fish in this river reach. The results of this study shall be used by the Joint Applicants to determine if additional mitigation measures are necessary to improve habitat quality or quantity.

12. **Upper Basin Habitat Enhancement and Restoration:** The Joint Applicants shall work with private and governmental entities in the Deschutes River Basin to implement cost-effective habitat enhancement and restoration measures to improve the quality of water flowing into the Project. These upper basin measures shall include, but not be limited to, the creation of riparian refugia, as well as improvements such as livestock exclusion, placement of large woody debris, planting of grass, shrubs, trees, and the maintenance and creation of wetlands.

The Joint Applicants shall expend a minimum of \$1.475 million for these upper basin measures over the first 5 years of the new license in accordance with the following table.

<b>Required Mitigation Measure</b>	<b>Minimum Required Expenditure</b>
Improved Riparian Corridor Management	\$750,000
Community Habitat Education Activities	\$25,000
Establishment of Reserves and Refugia	\$700,000
<b>Total</b>	<b>\$1,475,000</b>

**H. Total Dissolved Gas**

1. The Joint Applicants shall monitor total dissolved gas at the Reregulating Dam tailrace in accordance with the WQMP contained in the WQMMP.

2. If monitoring of total dissolved gas at the Reregulating Dam tailrace at times of spill indicates noncompliance with the total dissolved gas standard, then the Joint Applicants shall immediately develop a plan and schedule for assessing the problem and developing a remedy. Such plan and schedule shall be submitted to ODEQ for



approval within 60 days of identifying the excessive total dissolved gas concentrations via monitoring. Upon approval of the remedial plan by ODEQ, the Joint Applicants shall implement the plan in accordance with the approved schedule.

**I. Turbidity**

1. The Joint Applicants shall implement the erosion control measures for erosionally-sensitive shoreline areas of the Project reservoirs as proposed in the Final Joint Application Amendment, Exhibit E-VII-13.

2. The Joint Applicants shall continue the Shoreline Planting Program at all three Project reservoirs to enhance on-site riparian habitat, as proposed in the Final Joint Application Amendment, Exhibit E-IV-41.

3. The Joint Applicants shall monitor turbidity in accordance with the WQMP contained in the WQMMP.

**J. Toxic Substances; Discoloration, Scum, Oily Sleek; Aesthetic Conditions; Deleterious Conditions**

The Joint Applicants shall maintain and implement current Spill Prevention, Control, and Countermeasure (SPCC) plans for oil, hazardous materials, and non-hazardous materials prepared in accordance with the Clean Water Act requirements of 40 CFR 112. These plans shall address all locations at the Project where Project operations may potentially result in a spill of these materials to the reservoirs or the lower Deschutes River. In the event of a spill or release or threatened spill or release to Project reservoirs or the lower Deschutes River, the Joint Applicants shall immediately implement the site's SPCC plan and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

**K. Bacteria**

The Joint Applicants shall monitor for E. coli bacteria in accordance with the WQMP contained in the WQMMP.

**L. Cooling Water Discharge Permits**

Upon issuance of a new FERC license for the Project, the Joint Applicants shall within 30 days request and file National Pollutant Discharge Elimination System (NPDES) permit applications with ODEQ for cooling water discharges at each of the three powerhouses. This condition will be considered null and void if the Joint Applicants, prior to FERC license issuance, have applied to ODEQ for these NPDES permits.

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**M. § 401 Certification Compliance Schedules**

If any event occurs that is beyond the Joint Applicants' reasonable control and that causes or may cause a delay or deviation in compliance with schedules contained in this § 401 Certification, the Joint Applicants shall immediately notify ODEQ in writing of the cause of delay or deviation and its anticipated duration; the measures that have been or will be taken to prevent or minimize the delay or deviation; and the timetable by which the Joint Applicants propose to carry out such measures. It is the Joint Applicants' responsibility in the written notification to demonstrate to ODEQ's satisfaction that the delay or deviation has been or will be caused by circumstances beyond the control and despite due diligence of the Joint Applicants. If the Joint Applicants so demonstrates, ODEQ shall extend times of performance of related activities under this condition, as appropriate. Circumstances or events beyond the Joint Applicants' control include, but are not limited to, acts of nature, unforeseen strikes, work stoppages, fires, explosion, riot, sabotage, or war. ODEQ may also consider other circumstances or events as beyond the Joint Applicants' control. These other circumstances or events may include, but not be limited to, changes in state statutes; delays in the receipt of necessary approvals for construction design or permits; or delays that ODEQ agrees the Joint Applicants would not have been expected to anticipate. These other circumstances or events will only be considered if they are not due to the actions or inactions of the Joint Applicant. Increased cost of performance or consultant's failure to provide timely reports may not be considered circumstances beyond the Joint Applicants' control.

**N. § 401 Certification Modification**

ODEQ, in accordance with OAR Chapter 340, Division 48, and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary and feasible to address:

- (a) adverse or potentially adverse Project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this Certification was issued;
- (b) TMDLs (not specifically addressed above in these Certification Conditions);
- (c) changes in water quality standards;
- (d) any failure of Certification conditions to protect water quality or designated beneficial uses as expected when the Certification was issued; or
- (e) any change in the Project or its operations that was not contemplated by this Certification that might adversely affect water quality or designated beneficial uses.

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**O. Project Changes**

The Joint Applicants shall obtain ODEQ review and approval before undertaking any change to the Project that might significantly affect water quality (other than project changes required by or considered in this Certification), including changes to Project structures, operations, and flows.

**P. Project Repair or Maintenance**

The Joint Applicants shall obtain ODEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality (other than repair or maintenance activities required by or considered in this Certification). ODEQ may, at the Joint Applicants' request, approve specified repair and maintenance activities on a periodic or ongoing basis.

**Q. Project Inspection**

The Joint Applicants shall allow ODEQ such access as necessary to inspect the Project area and Project records required by this Certification at reasonable times as necessary to monitor compliance with § 401-certification conditions.

**R. Posting of § 401 Certification**

The Joint Applicants shall post a copy of these certification conditions in a prominent location at the Pelton Powerhouse Control Center.

**S. Water Quality Standards Compliance**

Notwithstanding the conditions of this certification, no wastes shall be discharged and no activities shall be conducted which will violate state water quality standards.

**T. Project Specific Fees**

In accordance with Oregon Revised Statutes (ORS) 543.080, the Joint Applicants shall pay a project-specific fee for ODEQ's costs of overseeing implementation of adaptive management provisions of this § 401 certification. The fee shall be \$25,000 (2002 dollars) annually, made payable to "State of Oregon, Department of Environmental Quality", and due on July 1 of each year after issuance of the new FERC license. This fee will not pay ODEQ's costs of participation, before or after issuance of the new FERC license, on the Fisheries Technical Subcommittee established by the Joint Applicants for the Project; such costs shall be paid by Joint Applicants by arrangement separate from this Certification condition. ODEQ shall credit against the fee amounts required under this Certification condition any fee or other compensation paid or payable

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to ODEQ, directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for ODEQ's cost of oversight of adaptive management. The fee shall expire 10 years after the first July 1 following issuance of this certification, unless terminated earlier by ODEQ because oversight of adaptive management is no longer necessary. One year before the tenth-anniversary expiration of the fee, or earlier if mutually agreed, ODEQ and the Joint Applicants shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. The Joint Applicants shall continue to pay any project-specific fee required after such review.

# **EXHIBIT A (WQMMP)**

**September 2002**

## **PELTON ROUND BUTTE PROJECT WATER QUALITY MANAGEMENT AND MONITORING PLAN**

**PREPARED BY:**

**Confederated Tribes of Warm Springs Reservation of Oregon  
And  
Portland General Electric Company**

### **3.0 DISSOLVED OXYGEN MANAGEMENT PLAN**

#### **3.1 ODEQ and CTWS dissolved oxygen standards**

The applicable ODEQ and Tribal water quality standards can be found in OAR 340-41 and Tribal Ordinance 80, respectively.

#### **3.2 Application to the Pelton Round Butte Hydroelectric Project**

The ODEQ and CTWS salmonid spawning DO criterion will apply to the Deschutes River downstream of the PRB Project during the periods of salmonid spawning and incubation, which in the lower Deschutes River is the entire year.

Based on water quality modeling (Khangaonkar 2001), the percentages of surface and bottom withdrawals listed in Table 2.1 would result in ambient DO concentrations in the Project discharge in excess of 11.0 mg/L during most of the year. During the 3.5 months (approximately 1 August through 15 November) when modeling indicates that DO concentrations would fall below 11.0 mg/L, they would still exceed 9.0 mg/L.

The Joint Applicants acknowledge that the 11.0 mg/L criterion is applicable in light of currently available information. The determination of whether the IGDO criterion will be met under selective withdrawal conditions cannot be made before selective withdrawal has been implemented and DO concentrations downstream reflect the actual blends being discharged. Accordingly, until post selective withdrawal IGDO monitoring demonstrates whether the 9.0 mg/L alternate criterion is applicable, the 11.0 mg/L criterion will apply.

For Project reservoirs, an 8.0 mg/L salmonid-rearing DO criterion applies at depths of occurrence or expected occurrence of salmonids.

#### **3.3 Facilities for compliance**

A selective withdrawal facility will be constructed at the existing turbine intake at Round Butte Dam. The facility, which will have intake gates at near the reservoir's surface and at depth, will be operated to blend water from the two intakes to meet the applicable ODEQ and CTWS DO standards in the lower Deschutes River and in Project reservoirs. The existing Reregulation Dam spillway facilities may also be used to comply with the applicable lower river DO and IGDO criteria, if needed (described below).

#### **3.4 Approach to DO management**

To meet the ODEQ and WCB DO standards, the Joint Applicants propose to operate the selective withdrawal facility within the range of surface and bottom withdrawals shown in Table

2.1. Based on an iterative model-run sequence using data from 1995 (based on flow, temperature, and water quality data from the 1995 water-year [Khangaonkar 2001]), the percentages of surface and bottom withdrawals listed in Table 2.1 would result in DO concentrations in the Project discharge that would exceed 11.0 mg/L during most of the year. During the period when DO concentrations would fall below 11.0 mg/L, DO concentrations are expected to be greater than 9.0 mg/L. These results indicate that the Project will meet the ambient DO criterion of 11.0 mg/L most of the time and during the rest of the year will comply with the 9.0 mg/L DO criterion.

Controlled spills at the Reregulating Dam have been shown to increase DO concentration in the discharge (Raymond et al. 1999). Therefore, if under the temperature management selective withdrawal regime it appears that the DO concentration in the Reregulating Dam discharge is going to drop below 11.0 mg/l or 95% saturation, the Joint Applicants will institute controlled spills at the Reregulating Dam to maintain ambient DO concentrations above 11.0 mg/L or 95% saturation.

Based on modeling results, it is also anticipated that DO concentrations will exceed 9.0 mg/L at all times, regardless of whether controlled spills are instituted at the Reregulating Dam. If post-selective withdrawal monitoring of IGDO demonstrates that IGDO levels exceed 8.0 mg/L at all times, the alternate water column criterion of 9.0 mg/L will apply. The need for controlled spills at the Reregulating Dam to meet the 11.0 mg/L criterion would thus be eliminated.

### **3.5 Dissolved oxygen monitoring**

Dissolved oxygen monitoring will be conducted for the life of the license at sites identified in Table 6.1. As data are collected and analyzed, specific DO monitoring sites may be added or eliminated in accordance with the 401 certifications. Real-time monitoring of DO will occur at the Reregulating Dam (RM 100) and in the Round Butte Dam tailrace. Monitoring at these locations will allow recording and transmission of hourly DO concentration measurements, which will be used to determine when controlled spills at the Reregulating Dam might be necessary to comply with ODEQ and CTWS standards.

Intergravel dissolved oxygen will be monitored downstream of the Reregulating Dam after the implementation of the selective withdrawal facility to verify the relationship between IGDO and ambient DO concentrations under selective withdrawal conditions. In accordance with current ODEQ and WCB protocols, sampling will be conducted during the first three years following implementation of the selective withdrawal facility. Thereafter, if the relationship between IGDO and ambient DO levels indicates that the 9.0 mg/L water column criterion is applicable, both IGDO and ambient DO levels will be monitored to demonstrate compliance with the dissolved oxygen standard.

### 3.6 DO management operations

It is anticipated that the surface intake will be used exclusively from January through May or June, depending upon the actual blending regime (Table 2.1). During the remaining months of the year, a blend of surface and bottom withdrawal will be released as part of the proposed temperature management program for the Project. If DO concentrations measured in the Round Butte Dam tailrace fall below 12 mg/L, the Joint Applicants will closely monitor discharge at the Reregulating Dam. If the seven-day mean minimum dissolved oxygen concentration in the discharge from the Reregulating Dam drops below 11.5 mg/L, the Joint Applicants will notify ODEQ and the WCB. The Joint applicants will institute controlled spills at the Reregulating Dam as the Joint Applicants determine necessary to maintain DO concentrations above 11.0 mg/L or 95% saturation.

However, if post-selective withdrawal IGDO monitoring demonstrates that the 9.0 mg/L standard is applicable, the management plan will be modified as follows:

If DO concentrations measured in the Round Butte Dam tailrace fall below 10 mg/L, the Joint Applicants will closely monitor discharge at the Reregulating Dam. If the seven-day mean minimum dissolved oxygen concentration in the discharge from the Reregulating Dam drops below 9.5 mg/L, the Joint Applicants will notify ODEQ and the WCB. The Joint Applicants will institute controlled spills at the Reregulating Dam as the Joint Applicants determine necessary to maintain DO concentrations above 9.0 mg/L.

Over time, it is expected that Project operators will further refine the relationship between DO concentrations in the Round Butte Dam tailrace and the Reregulating Dam discharge, which will lead to more effective prediction of when DO concentrations in the Reregulating Dam tailrace might approach ODEQ and CTWS standards. An improved correlation would allow for quicker and more accurate adjustments.

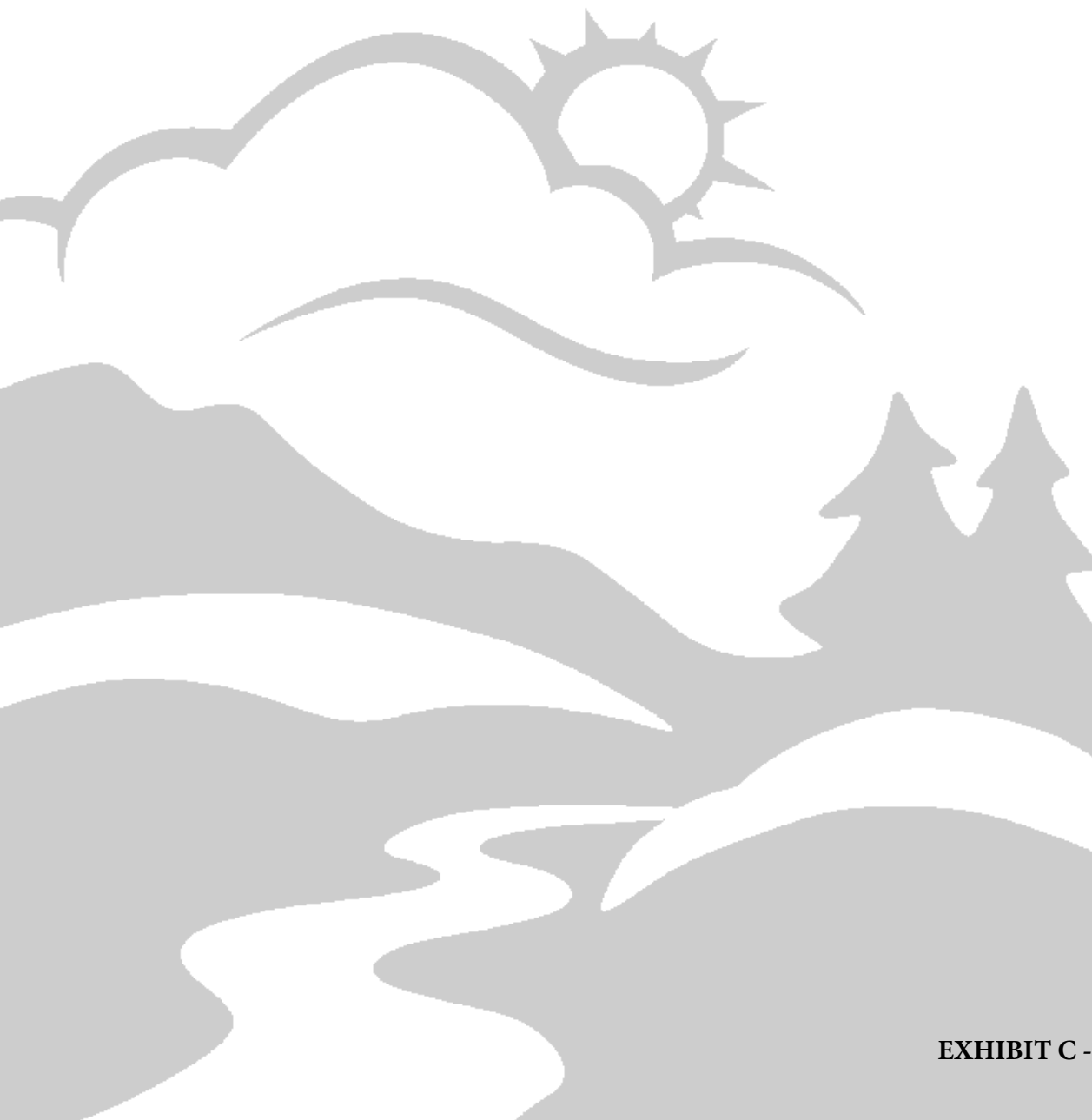
### 3.7 Reporting

Reports will be produced in two forms. Updates on DO concentrations at the two monitoring locations will be provided by email monthly, or more often if DO changes prompt the implementation of controlled spills. These email reports will include attached data files that will include the DO data gathered during the time period. In the event that a controlled spill program is instituted, regular reports (the reporting interval to be agreed upon at the time by ODEQ, the CTWS WCB, and the Joint Applicants) will be submitted via email. In addition, annual reports will be produced that will include graphs of DO data and a summary of the results of spills, if they occur. Annual reports will be submitted to ODEQ, the WCB, and the FTS February and presented at the annual Fisheries Technical Workshop.



# Water Quality Standards Review & 2018 - 2020 Program Priorities

December 2017



## Water Quality Standards

700 NE Multnomah St.  
Suite 600  
Portland, OR 97232  
Phone: 503-229-5696  
800-452-4011  
Fax: 503-229-5850  
Contact: Debra Sturdevant  
[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



State of Oregon  
Department of  
Environmental  
Quality

Item A 000145

This report prepared by:  
Karen Williams, Debra Sturdevant and Aron Borok

Oregon Department of Environmental Quality  
700 NE Multnomah Street, Suite 600  
Portland, OR 97232  
1-800-452-4011  
[www.oregon.gov/deq](http://www.oregon.gov/deq)

Contact:  
Debra Sturdevant  
503-229-6691

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us).

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**Table 1. Comparison of Current Oregon Criteria and EPA 2015 Recommended Criteria to Protect Human Health**

	Current Oregon criteria more stringent than EPA recommended criteria	Non-quantifiable EPA recommended criteria more stringent than current Oregon criteria	Quantifiable EPA recommended criteria more stringent than Oregon's current criteria	EPA recommended criteria not included in Oregon criteria
Water + organism Criteria	47	21	21	3
Organism Only Criteria	85	15	7	5

With regard to EPA’s new section 304(a) aquatic life criteria, as DEQ concludes work on the top priority projects described in Section 4.2 of this report, it will consider whether to conduct rulemaking to adopt these criteria. In particular, DEQ will evaluate the extent to which these pollutants are present in Oregon discharges or may enter Oregon waters. Moreover, DEQ will coordinate with EPA, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to assess whether the criteria would be approvable following ESA consultation. This information will help DEQ evaluate whether state adoption of these criteria through rulemaking is a higher priority than work on the second tier of priority projects.

## 4.2 Water Quality Standards Review Workplan

Based on the internal and external review of DEQ’s draft standards work priorities, as well the need to respond to requirements and schedules from external entities, DEQ plans to complete or initiate seven standards-related projects in the next three years, each of which is described in more detail below:

- 1) a cold water refuge plan for the lower Willamette River
- 2) a response to four individual variance applications received in summer 2017
- 3) a regional or statewide methylmercury variance
- 4) fish use and aquatic life use updates
- 5) a temperature strategy (including temperature variances and potentially site specific criteria or other criteria revisions)
- 6) clarification of the warm-, cool-, and cold-water aquatic life use definitions used in the dissolved oxygen standard.
- 7) an evaluation of the need for and scope of rulemaking to adopt new or revised aquatic life criteria for selenium, acrolein, carbaryl, diazinon and nonylphenol. Based on the information and conclusions, DEQ would initiate rulemaking as appropriate.

In Appendix A of this report, DEQ provides an estimated time frame for initiating and completing these seven projects.

The current resources available to do water quality standards work do not provide sufficient capacity to initiate additional projects prior to 2020. However, DEQ appreciated the detailed comments that several organizations and tribal government representatives submitted. Several commenters supported DEQ’s proposal to review implementation procedures for the narrative toxics criteria, and recommended that DEQ develop implementation procedures for other narrative criteria, such as sedimentation. Commenters also asked that DEQ consider additional protections for wetlands.

As the seven top priority projects are completed, DEQ will review a second tier of project priorities informed by this triennial review to initiate between 2020 and 2022. DEQ’s work will begin with scoping options for the following projects:

- 1) updating implementation procedures for the narrative toxics criterion,
- 2) developing implementation procedures for the narrative sedimentation criterion, or
- 3) examining how water quality standards revisions or implementation procedures may fill potential gaps in wetlands protection

Pertaining to updating implementation procedures for the narrative toxics criterion, DEQ would begin with a review of current Oregon procedures as well as procedures from other states. DEQ would evaluate the extent to which additional procedures would help to fill protection gaps or contribute to toxics reduction. Following such a review and evaluation, DEQ would update existing or develop additional procedures to implement the narrative toxics criterion.

As DEQ's work on the aquatic life criteria rulemaking, if it is recommended, and the narrative toxics criterion implementation procedure concludes, and should there be capacity before the next triennial review, DEQ would begin gathering information on Oregon and other state strategies to implement narrative sediment criteria and wetland water quality protections. DEQ would use this information to evaluate the scope and scale of these two projects, and then pursue the project determined to be the highest priority at that time. The deliverables for either project may include non-regulatory implementation procedures or revised rules.

#### Lower Willamette River Cold Water Refuge Plan

Oregon's temperature standard for the "migration corridor use" reach of the lower Willamette River includes a narrative provision regarding cold water refuges. DEQ has not yet determined how to evaluate the degree to which that narrative criterion is being attained. DEQ agreed to do this work as a result of the National Marine Fisheries Service's Biological Opinion (2015) on Oregon's temperature standard. DEQ has initiated the work, which has a completion deadline of November 2018. The resultant plan will help direct efforts that will bring high environmental value through habitat protection or restoration for threatened or endangered salmon and steelhead.

#### Response to Individual Variance Applications

DEQ received four variance applications in July 2017 and must process and respond to those applications. The variance applications apply to permit requirements associated with methylmercury criteria for Clean Water Services' four publicly owned treatment works within the Tualatin River Subbasin. The variances are needed in order to develop achievable limits and requirements within the Clean Water Services permit.

#### Methylmercury Strategy

DEQ identified a need for a methylmercury approach, such as a variance, that will enable permit issuance, protect beneficial uses, and require pollutant reduction. There is also a need to update Oregon's variance rules and DEQ's 2012 Variance IMD to be consistent with EPA's updated variance regulations adopted in 2015. Several commenters agreed that DEQ's 2012 Variance IMD should be updated to be consistent with EPA 2015 regulations. Since the time that DEQ conducted the internal and external review of water quality standards in spring and summer 2017, DEQ received applications for four individual variances associated with the methylmercury criteria. Separately, DEQ is party to a court order requiring completion of the Willamette Basin mercury TMDL by April 2019, meaning DEQ will be engaged in data analysis, modeling, and policy decisions related to multiple aspects of mercury pollutant reduction. Coordinating this work with near and longer term permitting needs is essential to ensuring DEQ has a cohesive regulatory approach to methylmercury, including issuance of permits.

#### Fish Use and Aquatic Life Use Updates

The Oregon Department of Fish and Wildlife and other agencies have several years of updated fish and aquatic life distribution information that is not currently reflected in Oregon's water quality standards. DEQ has done only minor updates to its aquatic life uses since 2003. ODFW is prepared to work with DEQ and provide this information as a basis for updating Oregon's fish and aquatic life use designations. These use updates have important internal and external drivers, such as requests from federal agencies, ensuring that standards protect the current use, and improving the efficiency of implementing standards in DEQ's permitting and TMDL programs. Commenters saw value in having maps and rules relate the most recent scientific information about fish presence and life stage. Updated maps that show where criteria based on fish and aquatic life presence apply will make permit review and water body assessments more expeditious and accurate.

#### Temperature Strategy

The current temperature criteria, absent the Natural Conditions Criterion, are not attainable in many waterbodies and portions of waterbodies across the state. Effluent limits based on the existing temperature criteria are not

achievable for many permittees that discharge to these waters. As well, TMDLs cannot be completed if they do not demonstrate attainment of the criteria.

DEQ acknowledges that several commenters recommended against developing temperature variances, and recommended that DEQ focus on enforcing TMDL load allocations to nonpoint sources. These are not exclusive efforts. DEQ will continue implementing the requirements of OAR 340-042-0070 and coordinating with designated management agencies, including other state agencies responsible for implementing nonpoint source pollutant reductions. At the same time, DEQ must continue to issue point source permits. A temperature strategy, which may include variances, will help DEQ issue timely permits and require sources to demonstrate continued reduction in thermal loads.

Temperature variances would likely be part of a temperature strategy, and criteria revisions may also be recommended. In addition, the National Marine Fisheries Service Biological Opinion on Oregon's temperature standards requires DEQ or EPA to review the need for a smoltification temperature criterion for the John Day River, a priority expressed by several commenters.

#### Dissolved Oxygen Clarifications

Oregon's dissolved oxygen standard includes different water quality criteria for cold-water, cool-water, and warm-water aquatic life and the current definitions of those classifications cause confusion. This project is urgent because EPA requested that DEQ make these revisions before it completed its next Integrated Report and DEQ agreed to do so. DEQ intended to initiate this project in fall 2017, but other priority projects have delayed the initiation of this work. DEQ continues to recognize the DO clarifications are among its highest priority projects.

#### Scope Rulemaking for new Aquatic Life Criteria

As DEQ concludes work on other high priority projects, DEQ will evaluate the extent to which acrolein, carbaryl, diazinon, nonylphenol and selenium are present in Oregon discharges or may enter Oregon waters. Based on this information and conclusions, DEQ will initiate rulemaking to adopt aquatic life criteria for these pollutants, as appropriate. This evaluation will include coordination with EPA, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to ensure that the recommended criteria will be approvable following ESA consultation.

#### Narrative Procedures – Toxics

Both internal and external commenters saw value in updating DEQ's procedures to implement the narrative toxics criteria. Documenting procedures to guide the implementation of the narrative toxics standard helps permit writers be consistent and efficient. DEQ will identify potential gaps in protection for toxic pollutants that do not have EPA recommended numeric criteria and review procedures used by other states to address those concerns. Documented procedures would also help DEQ be transparent with the public about how the toxics narrative criterion is implemented.

#### Narrative Procedures – Sedimentation; Wetlands Protection

DEQ is aware of multiple methods to evaluate the impacts of sedimentation on aquatic species and has reviewed and evaluated some of those methods in the context of water quality assessment and TMDL development. DEQ also realizes the substantial resources that would be necessary to develop and adopt an agreed upon methodology to interpret and apply the narrative sediment criterion across Oregon's waters. Several commenters recommended that DEQ use the sedimentation narrative criteria to address non-point source pollution. DEQ expects any effort in scoping this work would build on past work and review methods used by other states to develop procedures to implement Oregon's narrative sediment criteria. Based on DEQ's evaluation, DEQ would review this project alongside its second tier of project priorities.

Internal and external commenters also recommended that DEQ review the adequacy of existing standards to protect wetland water quality and beneficial uses. DEQ will begin such a review should the urgency for wetlands protections appear to exceed the need to clarify narrative sediment criterion procedures. This project would begin with a review of other state strategies, EPA recommendations, and protections afforded by other Oregon agency rules.

Corrections and Clarifications

During the standards review, DEQ staff and others identified several small, but substantive needed corrections, such as errors in tables, maps, and text; outdated information; and misidentified cross references. DEQ may incorporate these corrections and clarifications into a rulemaking process during one of the above stated priority projects.

# Appendix A – Triennial Review Work Plan Timeline

Projects to be initiated July 2017 – June 2020

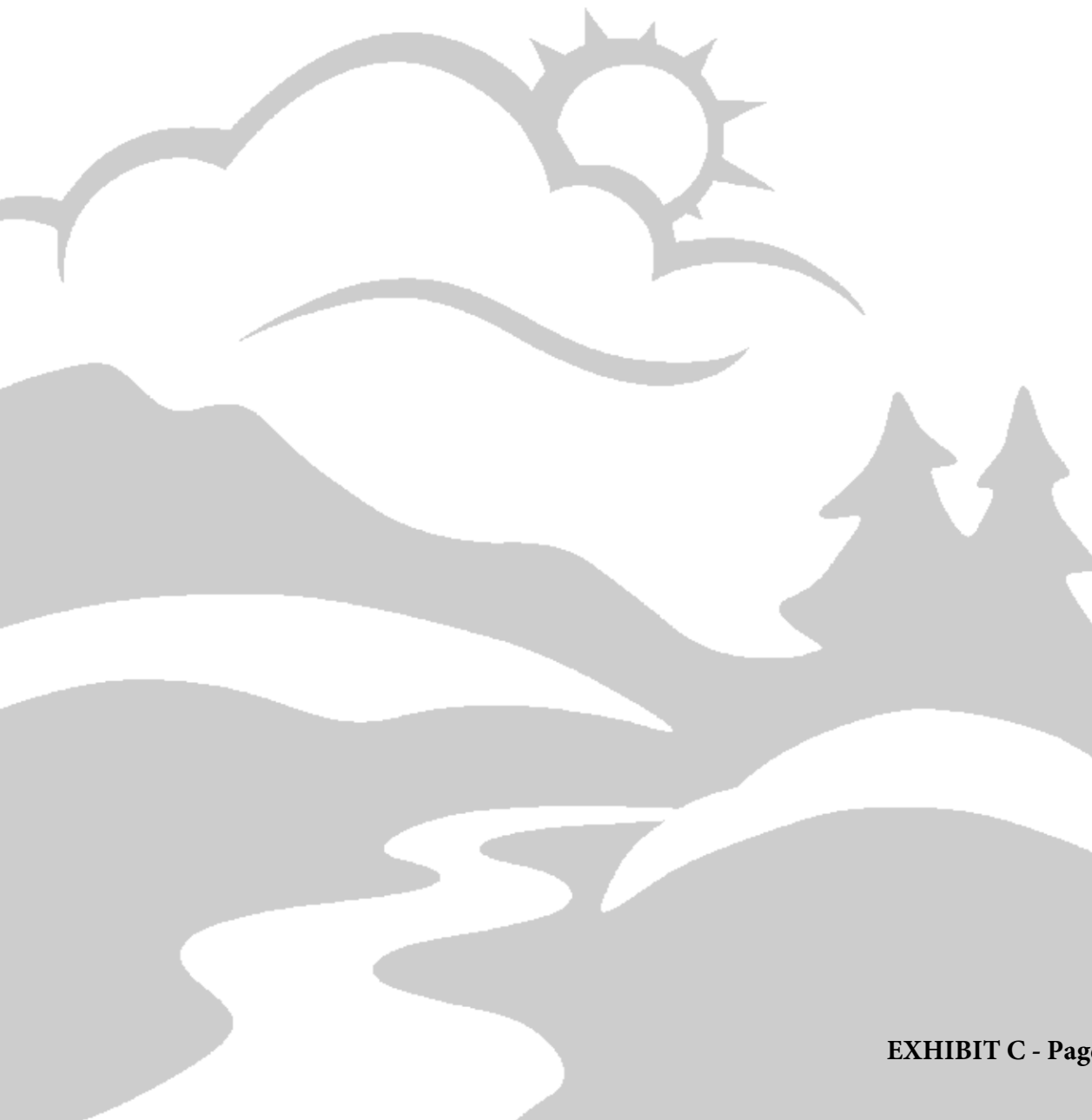
Project	Outcome	2017	2018	2019	2020
<b>1. Mercury Multiple Discharger Variance Strategy</b>					
1.1. Planning & development	Methylmercury variances that allow permits to be issued and require mercury reduction.		X	X	
1.2. Rulemaking and Public Comment				X	X
<b>2. Clean Water Services Mercury Variances</b>					
	Respond to applications for 4 variances for POTWs operated by CWS. Needed in order to issue the CWS permit.		X	X	X
<b>3. Lower Willamette Cold Water Refuge Plan</b>					
3.1. Project planning, data assembly and development	A Cold Water Refuge Plan for the lower 50 miles of the Willamette River that evaluates whether narrative criterion is met, identifies existing refuges to protect or restore.	X	X	X	
3.2. Writing, peer review and submittal				X	X
<b>4. Dissolved Oxygen Clarifications</b>					
Package with aquatic life use updates rulemaking	Clarify the use classification definitions used in the dissolved oxygen standard.			X	X
<b>5. Fish and Aquatic Life Use Updates</b>					
5.1. Planning, data assembly, development	Specify where and when resident trout spawning is a designated use with maps or a process-based designation. Designate an additional 33.5 miles of bull trout spawning and rearing habitat. Review and update fish use designations based on best available current information.			X	X
5.2. Rulemaking and public comment for rule revisions					X
<b>6. Temperature Strategy</b>					
3.1 Planning and development	Begin developing a scientifically sound, practical means, such as a waterbody or multiple discharger variance(s), to address situations where natural conditions protect uses or where criteria are not attainable due to natural conditions. Scope to include Willamette River, possibly other streams of the Willamette basin, or possibly statewide. May identify need for a temperature standard revision(s). Review need for John Day smoltification criteria during this process.		X	X	X
3.2 Variance Rulemaking and Public Comment				X	X
<b>7. New aquatic life 304(a) criteria evaluation</b>					
Evaluate whether to initiate rulemaking to adopt new aquatic life 304(a) criteria	A decision to initiate rulemaking for new aquatic life criteria, or to prioritize other work, such as implementation procedures for Oregon’s narrative toxics criterion.				X



# Water Quality Standards

## Triennial Review Report and 2021–2024 Work Plan

July 2021



### Water Quality Standards

700 NE Multnomah St.  
Suite 600  
Portland, OR 97232  
Phone: 503-229-5696  
800-452-4011  
Fax: 503-229-6124  
Contact: Debra Sturdevant

[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



Item A 000153  
State of Oregon  
Department of  
Environmental  
Quality

This report prepared by:  
Debra Sturdevant and Kaley Major

Oregon Department of Environmental Quality  
700 NE Multnomah Street, Suite 600  
Portland, OR 97232  
1-800-452-4011  
[www.oregon.gov/deq](http://www.oregon.gov/deq)

Contact:  
Debra Sturdevant  
503-229-6691 or 503-887-2963

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us).

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## 4. Standard Revision Projects

### 4.1 Water Quality Standards Review Workplan

The Triennial Review Workplan includes the set of projects DEQ plans to complete or initiate from July 2021 through June 2024, and an estimated schedule for the initiation and completion of those projects. Information on the expected scope and outcome of each project and the reason it is a priority to complete or initiate during this time period is provided in Table 1. DEQ estimated the amount of time each project would take and which projects could be conducted concurrently to lay out the estimated schedule shown in Appendix A.

The projects in the 2021-2024 workplan were selected based on their priority rating, the need for the project, the available staff resource, and public comment. The projects represent a balance between those requiring a large time and effort investment (i.e. a rulemaking), and those that require fewer resources but would result in benefits to water quality protection or program work. Most of the projects on the list were originally rated as high priority; these will be most prioritized during the 2021-2024 period. Other projects initially ranked as medium priorities have been included in the Workplan in response to public comment and because DEQ agrees they would provide value. However, some of these projects will be or initiated as time allows if there is sufficient staff resource available.

#### **High Priority Projects proposed to be completed or initiated from July 2021 to June 2024 include:**

1. Complete the rulemaking to update aquatic life use subcategory designations for temperature.
2. Complete the rulemaking to designated aquatic life use subcategories for dissolved oxygen.
3. Complete variance implementation procedures.
4. Complete case studies and other preparations for temperature variances and respond to any variance applications.
5. Conduct rulemaking to adopt aquatic life criteria for toxic pollutants including acrolein, carbaryl, diazinon, nonylphenol and potentially aluminum and cadmium, and revise the criteria for selenium.
6. Develop procedures to apply the toxics narrative criterion in the assessment, permitting, and other water quality protection programs.
7. Develop procedures to apply the biological narrative criterion in the assessment, permitting, and other water quality protection programs.
8. Develop procedures to apply the algal growth narrative criterion and chlorophyll-a action value in the assessment, permitting, and other water quality protection programs. Together with numeric pH and dissolved oxygen criteria, these procedures will provide the tools needed to prevent or remedy excessive aquatic plant and nuisance phytoplankton growth caused by nutrient loading. This project may recommend developing numeric nutrient criteria for priority waterbodies.
9. Develop procedures to apply the sedimentation narrative criterion in the assessment, permitting, and other water quality protection programs.

#### **Additional projects included in the 2021-2024 workplan:**

10. Assist the assessment program with a methodology to assess ocean acidification and marine dissolved oxygen conditions using current criteria and begin background research to identify whether there are gaps in the water quality criteria needed to protect beneficial uses of marine waters.
11. Revise the pH criteria for the Crooked River.
12. Update the antidegradation implementation procedures, as time allows.

13. Compare EPA's recommended human health criteria and DEQ's human health criteria to evaluate whether to update Oregon's human health toxics criteria during the next Triennial Review, as time allows.
14. Correct designated uses for certain constructed waterways, such as irrigation canals and drainage ditches, as time allows and where data are provided to DEQ demonstrating that the proposed use changes are correct and appropriate.

**Table 1: 2021–2024 Water Quality Standards Workplan: Projects Included**

Note: Projects shaded in green were rated a high priority; projects shaded in blue were rated a medium priority.

Topic and OAR (if applicable)	Project Scope	Problem Statement	Outcome/Result	DEQ Reasoning for Priority
<p>Designated Use - Fish and Aquatic Life Subcategories for Temperature - In Progress</p> <p>Beneficial use rule for each basin in OAR 340-041-0101 to OAR 340-041-0340</p>	<p>Adopt clear and appropriate aquatic life use designations based on the best available data, primarily from the Oregon Department of Fish and Wildlife.</p>	<p>Aquatic life use designations have not been updated since 2003 and may not reflect current information.</p>	<p>Fish use designations up to date with ODFW data. Bull trout designations revised based on data from USFWS and ODFW. Update interior basin resident trout use designations.</p>	<p>High administrative and environmental value that will allow DEQ to apply the correct water quality criteria to protect native aquatic life.</p> <p>The USFWS 2015 Biological Opinion on the temperature standard requested that DEQ add specified reaches as bull trout use.</p> <p>This project was identified as a high priority during the 2017 triennial review. DEQ initiated the project in 2020 and expects to complete it in 2022.</p>
<p>Designated Use - Aquatic Life Subcategories for Dissolved Oxygen - In Progress</p> <p>OAR 340-041-0016</p>	<p>Adopt clear and appropriate aquatic life use designations based on the best available data.</p> <p>Specify where and when resident trout spawning is a designated use. Identify where cold, cool and warm water aquatic life communities occur.</p>	<p>The location and timing of the aquatic life use subcategories used in the dissolved oxygen standard have not been designated in rule. The rules do not specify where "active resident trout spawning areas" are located or when spawning and egg incubation occurs. DEQ currently relies on an ecoregional approach and spawning dates outlined in an implementation memo to EPA.</p>	<p>Because there are still data limitations, the uses may be specified by method rather than mapped. The method-based approach would incorporate site specific data when it becomes available or is updated.</p>	<p>This project was identified as a high priority during the 2017 triennial review. DEQ initiated the project in 2020 and expects to complete it in 2022.</p> <p>It will ensure that use designations are based on the best available information and will increase certainty regarding where the dissolved oxygen criteria apply. This will enable DEQ and regulated parties to implement the dissolved oxygen standard more accurately and consistently.</p> <p>This project is rated as high in urgency because EPA requested that DEQ designate resident trout spawning use prior to the next water quality assessment.</p>

Topic and OAR (if applicable)	Project Scope	Problem Statement	Outcome/Result	DEQ Reasoning for Priority
Variance Procedures - In Progress  OAR 340-041-0059	DEQ's variance procedures need to be updated to reflect current state and federal regulations and guidance.	The current Variance Internal Management Directive does not reflect Oregon's variance rule updates from 2020 or EPA regulations promulgated in 2015.	Clear implementation procedures will support the use of variances where they are appropriate.  Variances are a Clean Water Act tool for permits and 401 certifications when a water quality standard is not feasibly attainable.	High administrative value because DEQ anticipates that there will be a need for variances in order to issue permits.  This was identified as priority work in the 2017 triennial review. DEQ has initiated the project, but work will continue through 2021.
Temperature Variances - In Progress  OAR 340-041-0028, OAR 340-041-0059	Variances for discharges who cannot feasibly meet permit limits based on the current temperature criteria.	The biologically-based temperature criteria are colder than what can be feasibly achieved in multiple locations around the state. Therefore, DEQ expects some dischargers will need to obtain a variance.	Variances for qualified dischargers as needed and appropriate.	This project has high administrative value and urgency because it will allow DEQ to issue permits, with conditions, for dischargers who cannot achieve permit limits based on the temperature standard.  This project is a continuation of variance work identified as a high priority in the 2017 triennial review.
Toxics - aquatic life criteria  OAR 340-041-0033	Update Oregon's aquatic life criteria. Consider EPA recommendations for acrolein, carbaryl, diazinon, nonylphenol and selenium. Consider adopting the federally promulgated aluminum and acute cadmium criteria into state rule.	EPA has published new or updated aquatic life criteria recommendations that DEQ has not yet adopted. In addition, EPA promulgated aluminum and acute cadmium criteria for Oregon.	Aquatic life criteria that are up to date with the latest science and with EPA recommendations, to the extent warranted.	High environmental value by adopting new and updated aquatic life toxics criteria. The new criteria will help DEQ limit or prevent discharges and runoff of these pollutants to Oregon waters.  While some of these pollutants are not widely found in Oregon waters or regulated discharges, some are found in ambient waters at levels of concern.
Toxics - narrative criterion  OAR 340-041-0033	Review and update procedures to apply Oregon's narrative toxics criterion (i.e. Internal Management Directive). Evaluate how Whole Effluent Toxicity testing is working for the permitting program. Consider other methods or other published benchmarks.	EPA has not developed numeric criteria recommendations for all the new and varied toxic substances that may be impacting waters. Developing procedures to implement the narrative toxics criterion may provide DEQ an opportunity to protect beneficial uses from toxic substances which have no numeric criteria.	The ability to regulate toxic pollutants of concern that have no Clean Water Act numeric criteria.	Potential for high ecological and human health value by allowing DEQ to regulate toxic pollutants of concern that have no numeric criteria.  High administrative value for permitting efficiency and effectiveness by providing clear procedures.

Topic and OAR (if applicable)	Project Scope	Problem Statement	Outcome/Result	DEQ Reasoning for Priority
Biocriteria OAR 340-041-0011	Update procedures to apply the narrative biocriteria. Consider how the biocriteria could complement other criteria, such as excessive algal growth and sedimentation, and how to develop stressor identification tools.	The narrative biocriteria criterion could be more fully used to understand where impacts to beneficial uses are occurring. Better methods for the stressor identification process are needed. Also, the biological criterion is currently not applicable to all waterbodies.	Clear procedures that apply new metrics and methods to more fully use biocriteria and biological assessment in DEQ's water quality protection programs.	High environmental value through aquatic life protection. This will allow DEQ to consistently apply the existing narrative criterion.
Excessive Aquatic Plant and Algal Growth and Nuisance Phytoplankton Growth OAR 340-041-0007, OAR 340-041-0019	A phased, integrated approach for dealing with excessive aquatic plant and algae growth and eutrophication. This approach should include clear and consistent procedures to apply the excessive algal growth narrative criterion and chlorophyll-a action value together with the numeric pH and dissolved oxygen criteria.	DEQ does not have documented procedures to apply these narrative criteria. Total Maximum Daily Loads can identify the pollutants causing dissolved oxygen, pH or chlorophyll-a exceedances. However, there may be a need to control nutrient loading prior to the completion of a TMDL.	Targeted control of nutrient pollution where it is degrading water quality.  Consider whether numeric nutrient criteria are needed for specific waterbodies.	This would help DEQ address excessive algal growth and nutrient loading with current rules.  High environmental and administrative value for waterbodies where the water quality impacts from nutrient loading could be reduced or mitigated.
Sedimentation OAR 40-041-0007 (11)	Build on current knowledge and experience to develop procedures to apply the narrative criterion pertaining to suspended and bedded sediment.	DEQ does not have documented procedures to apply this narrative criterion. However, stream substrate is an important feature of salmonid spawning habitats, including Endangered Species Act listed species. Sediment transport and dynamics are a variable but critical element of a properly functioning stream and floodplain. The importance is heightened by recent wildfires, which may lead to increased inputs of sediment.	Clear metrics and methods to apply the sedimentation narrative criterion. Improved ability to prevent or remedy the impacts of sediment on threatened and endangered salmon and steelhead and other native biota and to protect healthy functioning streams.	High environmental value through protection of aquatic life use. However, this project will likely require significant staff resources.  There are no external drivers or pending actions creating urgency for this project. But it has been a need that has gone unaddressed for a long time. DEQ staff expect that there are now methods and metrics that could be used to apply this criterion in a scientifically credible and appropriate manner.






## **EXHIBIT D**

Relevant Oregon Department of Fish and Wildlife Documents

Timing Unit ID: 10362

Life Stage/Activity/Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments
<b>Adult Fluvial or Adfluvial Migration</b>													
Redband (Native Rainbow) Trout													
Bull Trout													
<b>Adult Spawning</b>													
Redband (Native Rainbow) Trout													
Bull Trout													
<b>Adult/Sub-Adult Rearing</b>													
Redband (Native Rainbow) Trout													
Bull Trout													
<b>Egg Incubation through Fry Emergence</b>													
Redband (Native Rainbow) Trout													
Bull Trout													
<b>Juvenile Rearing</b>													
Redband (Native Rainbow) Trout													
Bull Trout													
<b>Juvenile/Sub-Adult Migration</b>													
Redband (Native Rainbow) Trout													
Bull Trout													

 Represents periods of peak use based on professional opinion.  
 Represents lesser level of use based on professional opinion.  
 Represents periods of presence, either with no level of use OR uniformly distributed level of use indicated

Based on professional opinion, 90% of the life-stage activity occurs during the time frame shown as the peak use period.  
 Based on professional opinion, 10% of the life-stage activity occurs during the time frame shown as the lesser use period.

This document was created on 11/10/2003.  
 Input to this data was contributed by  
 Steve Pribyl, ODFW  
 Rod French, ODFW

Timing Unit ID: 10362

Life Stage/Activity/Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments
<b>Upstream Adult Migration</b>													
Summer Steelhead	▨	▨	▨				▨	▨	▨	▨	▨	▨	C2
Spring Chinook salmon				▨	▨	▨	▨	▨	▨	▨			
Sockeye salmon						▨	▨	▨	▨	▨			
Fall Chinook salmon							▨	▨	▨	▨	▨	▨	
<b>Adult Spawning</b>													
Summer Steelhead	▨	▨	▨									▨	
Spring Chinook salmon								▨	▨				
Sockeye salmon													
Fall Chinook salmon										▨	▨	▨	
<b>Adult Holding</b>													
Summer Steelhead		▨	▨	▨	▨								
Spring Chinook salmon						▨	▨	▨	▨				
Sockeye salmon						▨	▨	▨	▨				C1
Fall Chinook salmon							▨	▨	▨	▨			
<b>Egg Incubation through Fry Emergence</b>													
Summer Steelhead			▨	▨	▨								
Spring Chinook salmon			▨	▨	▨								
Sockeye salmon													
Fall Chinook salmon	▨	▨	▨	▨							▨	▨	
<b>Juvenile Rearing</b>													
Summer Steelhead	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	
Spring Chinook salmon	▨	▨	▨	▨	▨						▨	▨	
Sockeye salmon													
Fall Chinook salmon			▨	▨	▨	▨	▨						
<b>Downstream Juvenile Migration</b>													
Summer Steelhead			▨	▨	▨								
Spring Chinook salmon			▨	▨	▨	▨							
Sockeye salmon													
Fall Chinook salmon						▨	▨						

▨ Represents periods of peak use based on professional opinion.  
 ▨ Represents lesser level of use based on professional opinion.  
 ▨ Represents periods of presence, either with no level of use OR uniformly distributed level of use indicated

Based on professional opinion, 90% of the life-stage activity occurs during the time frame shown as the peak use period.  
 Based on professional opinion, 10% of the life-stage activity occurs during the time frame shown as the lesser use period.

**Comments**

- C1 - Small number of individuals (5-12) waiting to return to Lake Billy Chinook
- C2 - Lots of individuals moving through this system

This document was created on 11/10/2003.  
 Input to this data was contributed by  
 Steve Pribyl, ODFW  
 Rod French, ODFW



February 27, 2019

Jonah Sandford, Executive Director  
Deschutes River Alliance  
5331 SW Macadam, Ste 330  
Portland, OR 97239

Re: Deschutes redband trout spawning

Dear Mr. Sandford:

On behalf of Director Melcher, thanks for your letter offering reports DRA has received of lower Deschutes River redband trout (*Oncorhynchus mykiss newberryi*) spawning earlier. As you note, redband trout have a very plastic life history and readily adapt life-history strategies that take advantage of often harsh and changing environmental conditions. It is common for redband trout in groundwater-influenced systems to have a very protracted spawn timing. For instance, Metolius redband have been observed spawning nearly every month of the year, in the upper Deschutes fish initiate spawning as early as December, and throughout the Klamath Basin, redband spawning typically occurs over an 8 to 10 month period in areas of large groundwater influence. That said, most spawning still primarily takes place over a 3 month period, but it is also likely to observe spawning on 2 months on either side of the peak period.

Our lower Deschutes monitoring also suggests that redband spawning may be more protracted than identified in previous ODFW reports. In fact, staff observed abundant redband spawning activity during fall Chinook spawning surveys last December. Our staff also observed redband spawning in lower Trout Creek last December. Additionally, staff has regularly observed spawned out fish during redband sampling events in February, and sampled spawning fish at weirs located in Bakeoven and Buck Hollow Creeks as early as late December. The weirs have been operated from 2009 through 2018.

As you are aware, the Deschutes is relatively unique due to its large groundwater influence, and likely has more stable flow than any other large river in the country. A recent hydrologic investigation by USGS and OWRD found that groundwater contributes about 75% of the 4,660 cfs mean annual flow in the Deschutes, with most of the flow emanating from near the Metolius and Crooked River's confluences with Lake Billy Chinook. As lower Deschutes temperatures begin to reflect more natural conditions as a result of project relicensing actions, it is likely that redband will respond by expressing a protracted spawn time more typical of a river with groundwater influence and a natural temperature regime.

Little data exists on redband spawn timing prior to the construction of the Pelton Round Butte Projects, but it would be likely that spawning was more protracted prior to the construction of the projects. While

the effects of the changing spawn timing are unknown, it is likely there is a survival advantage to spreading spawn timing over a greater period, thus reducing the risk of catastrophic events on a more narrow spawn timing. Additionally, it may be beneficial to initiate spawning earlier under more favorable environmental conditions, along with emerging at more favorable times for optimum growth and survival.

Thanks again for your observations, and your concern for the health of fish throughout the Deschutes watershed.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rod A. French". The signature is fluid and cursive, with the first name "Rod" being the most prominent.

Rod A. French  
Mid-Columbia District Fisheries Biologist

Cc Director Melcher, ODFW Commission

## **EXHIBIT E**

Operational Requirements and Considerations on the  
Lower Deschutes River for the  
Pelton Round Butte Hydroelectric Project

**Final**

**EVALUATION AND FINDINGS REPORT**

on the

**Application for Certification  
Pursuant to Section 401 of the  
Federal Clean Water Act**

Submitted by:

Portland General Electric Company  
and  
The Confederated Tribes of the Warm Springs Reservation of Oregon

for the

**RELICENSING OF THE PELTON ROUND BUTTE  
HYDROELECTRIC PROJECT  
ON THE DESCHUTES RIVER, JEFFERSON COUNTY, OREGON  
(FERC No. 2030)**

Pursuant to  
Oregon Administrative Rules Chapter 340, Division 48

Prepared by:

Oregon Department of Environmental Quality  
811 S. W. 6th Ave.  
Portland, Oregon 97204

**June 19, 2002**

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the TMP. If the designated beneficial uses are adversely affected by the failure to achieve the LA, ODEQ may modify the TMP to require additional temperature measures, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the TMP that would require the Project to reduce water temperatures beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.

5. Any Project-related instream temperature increase of 0.25°F. or less above the relevant criterion shall not be deemed to contribute to an exceedance of the temperature criterion or to a violation of the temperature water quality standard.
6. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:
  - (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
  - (b) Modifications to the TMP require or indicate a need for modification to the WQMP.
7. With the approval of ODEQ, the Joint Applicants may cease implementing the TMP and WQMP or may implement a modified TMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for temperature and will not contribute to the exceedance of the relevant temperature criterion in waters affected by the Project.
8. The Joint Applicants shall implement modifications requested by ODEQ under these certification conditions and the WQMMP.

### **9.3 Dissolved Oxygen (DO) – OAR 340-041-0565(2)(a) and CTWS Ordinance 80, 432.100(2)(a)**

#### **9.3.1 Applicable State Standard**

The applicable State standard for dissolved oxygen is as follows:

**340-041-0565(2)** No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Deschutes Basin:

- (a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:
  - (A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

- (i) The dissolved oxygen shall not be less than 11.0 mg/L. However, if the minimum intergravel dissolved oxygen (IGDO), measured as a spatial median, is 8.0 mg/L or greater, then the DO criterion is 9.0 mg/L;
  - (ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/L or 9.0 mg/L criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.
- (B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/L;
- (C) A spatial median of 8.0 mg/L intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/L, the Department may, in accordance with priorities established by the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;
- (D) For waterbodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/L as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/L, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/L as a 30-day mean minimum, 6.5 mg/L as a seven-day minimum mean, and shall not fall below 6.0 mg/L as an absolute minimum (Table 21);
- (E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/L as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/L as a 30-day mean minimum, 5.0 mg/L as a seven-day minimum mean, and shall not fall below 4.0 mg/L as an absolute minimum (Table 21);
- (F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/L as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/L as a 30-day mean minimum, and shall not fall below 4.0 mg/L as an absolute minimum (Table 21).

**OAR 340-41-0006** defines several terms used in the Dissolved Oxygen standards:

- (44) “Intergravel Dissolved Oxygen” (IGDO) – The concentration of oxygen measured in the stream gravel pore water. For the purposes of compliance with criteria, the dissolved oxygen concentration should be measured within a redd or artificial redd, down-gradient of the egg pocket. Measurements should be taken within a limited time period; for example, prior to emergence of fry during the month of March.
- (45) “Spatial Median” – The value which falls in the middle of a data set of multiple IGDO measurements taken within a spawning area. Half the samples should be greater than, and half the samples should be less than the spatial median.
- (46) “Daily Mean” (dissolved oxygen) – The numeric average of an adequate number of data to describe the variation in dissolved oxygen concentration throughout a day, including daily maximums and minimums. For the purpose of calculating the mean dissolved oxygen concentration.
- (47) “Monthly (30-day) Mean Minimum” (dissolved oxygen) – The minimum of the 30 consecutive day floating averages of the calculated daily mean dissolved oxygen concentration.
- (48) “Weekly (seven-day) Mean Minimum” (dissolved oxygen) – The minimum of the seven consecutive day floating average of the calculated daily *mean* dissolved oxygen concentration.
- (49) “Weekly (seven-day) Minimum Mean” (dissolved oxygen) – The minimum of the seven consecutive day floating average of the daily *minimum* concentration. For purposes of application of the criteria, this value will be used as the reference for diurnal minimums.
- (50) “Minimum” (dissolved oxygen) – The minimum recorded concentration including seasonal and diurnal minimums.
- (51) “Cold-Water Aquatic Life” – The aquatic communities that are physiologically restricted to cold water, composed of one or more species sensitive to reduced oxygen levels. Including but not limited to *Salmonidae* and cold-water invertebrates.
- (52) “Cool-Water Aquatic Life” – The aquatic communities that are physiologically restricted to cool water, composed of one or more species having dissolved oxygen requirements believed similar to the cold-water communities. Including but not limited to *Cottidae*, *Osmeridae*, *Acipenseridae*, and sensitive *Centrarchidae* such as the small-mouth bass.
- (53) “Warm-Water Aquatic Life” – The aquatic communities that are adapted to warm-water conditions and do not contain either cold- or cool-water species.

### 9.3.2 Applicable Tribal Standard

The applicable Tribal standard for dissolved oxygen is as follows:



**CTWS Ordinance 80, 432.110(2)(a)** No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Deschutes River:

- (A) For waterbodies identified by the Tribe as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:
  - (i) The seven-day mean minimum dissolved oxygen shall not be less than 11.0 mg/L. However, if the minimum intergravel dissolved oxygen, measured as a spatial is 8.0 mg/L or greater, then the dissolved oxygen criterion is 9.0 mg/L.
  - (ii) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/L or 9.0 mg/L criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.
  - (iii) Periods of native salmonid spawning, egg incubation, and fry emergence for the gravel are flow and temperature dependent and tend to vary with elevation. If necessary, site specific dates for these periods may be established by the Tribe after full satisfaction of the public participation of the Tribes continued and integrated planning process.

### 9.3.3 Application of the Dissolved Oxygen Standard

One of the principal parameters used to determine water quality is dissolved oxygen (DO). Maintaining adequate concentrations of DO is vitally important for supporting fish, invertebrates, and other aquatic life. Some aquatic species such as the salmonids are very sensitive to reduced concentrations of DO. Sensitivity also varies between various life stages (egg, larvae, and adults), and between different life processes (feeding, growth, and reproduction).

DO levels within gravels (intergravel DO, or IGDO) directly influence the survival of salmonid embryos. Many of the salmonids spawn in gravel redds. The critical DO levels for the developing embryos occur in the intergravels surrounding the eggs at these redds. High water column DO levels are not necessarily indicative of adequate IGDO levels, and vary depending on several interrelated factors including water column concentrations, the percentage of fine sediment in the gravel pores, sediment oxygen demand, and oxygen demand of the eggs.

The appropriate DO criterion needs to be matched with the location within a waterbody wherever and whenever sensitive beneficial uses occur or would be expected to occur under natural conditions. The Project reservoir environments support cold-water aquatic life, thus the applicable DO criterion is 8.0 mg/L, in accordance with OAR 340-041-0565(2)(a)(D). With respect to natural lakes and reservoirs that stratify, it may not be possible to meet DO criteria at all depths and locations. With respect to § 401 certifications for hydroelectric reservoirs that stratify, ODEQ requires the following:

- 1) Demonstration that significant portions of the reservoirs will provide adequate water quality, compliant with all applicable criteria, supportive of the beneficial uses when and where they occur;

- 2) Implementation of management measures to the highest extent practicable to meet standards criteria in as large of a portion of the reservoirs as possible;
- 3) If applicable criteria cannot be met in the entire reservoir, the § 401 applicant must provide information describing why; and,
- 4) Temperature and/or other water quality management plans are required as deemed appropriate to accommodate an adaptive management approach to address the water quality issues and maximize suitable habitat.

The waters downstream of the Project in the lower Deschutes River support salmonid spawning, with various species of salmonid spawning or egg incubation occurring practically year-round. Hence, the applicable DO criterion for the river below the Project is 11.0 mg/L or 95 percent saturation. However, if the IGDO in the lower river, measured as a spatial median, is 8.0 mg/L or greater, then the DO criterion for the water column is 9.0 mg/L or 95 percent saturation (OAR 340-041-0565(2)(a)(A)).

#### **9.3.4 Joint Applicants' Description of Present Conditions**

Dissolved oxygen values for the three tributary streams above the Project are summarized in Figure 9.3-1. The annual ranges of DO values in the three tributaries, measured during the daytime, are similar. The Metolius River has somewhat higher DO values (median value = 11.8 mg/L) than the Deschutes River (median = 11.2 mg/L) and Crooked River (median = 10.7 mg/L). Daytime DO values measured between 1994 and 1996 in the Metolius and Deschutes Rivers were greater than 11.0 mg/L with only a few exceptions. Dissolved oxygen in the Crooked River was usually close to 11.0 mg/L.



**Federal  
Energy  
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**Office of  
Energy Projects**

**June 2004**

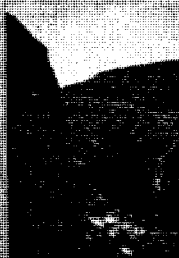
**FERC/FEIS - 0165F**

# **Final Environmental Impact Statement**

## **Pelton Round Butte Hydroelectric Project, Oregon**

**(FERC Project No. 2030)**

**888 First Street, N.E., Washington, DC 20426**



Item A 000179

**FERC/FEIS - 0165F**

**FINAL ENVIRONMENTAL IMPACT STATEMENT  
FOR HYDROPOWER RELICENSING**

**PELTON ROUND BUTTE HYDROELECTRIC PROJECT  
FERC Project No. 2030-036  
Oregon**

**Joint Applicants:  
Portland General Electric  
121 S.W. Salmon  
Portland, OR 97204**

**and**

**The Confederated Tribes of the  
Warm Springs Reservation of Oregon  
P.O. Box 960  
Warm Springs, OR 97761**

**Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Licensing  
888 First Street, NE  
Washington, D.C. 20426**

**June 2004**

Attachment A: Petition and exhibits  
Oct. 18, 2021, EQC special meeting  
Page 174 of 216

**FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426**

**OFFICE OF ENERGY PROJECTS**

**TO THE PARTY ADDRESSED:**

**Attached is the final environmental impact statement (EIS) for the Pelton Round Butte Hydroelectric Project (FERC Project No. 2030-036), located on the Deschutes River in Oregon.**

**The final EIS documents the views of the Federal Energy Regulatory Commission (Commission or FERC) staff regarding the relicensing of the project. Before the Commission makes a decision on relicensing, it will take into account all concerns relevant to the public interest. The final EIS will be part of the record from which the Commission will make its decision. An electronic copy of the final EIS may be viewed on FERC's website at [www.ferc.gov](http://www.ferc.gov) using the "eLibrary" link and following the instructions (call 1-866-208-3676 for assistance). The TTY number is 202-502-8659.**

**Attachment: Final Environmental Impact Statement**

## COVER SHEET

- a. **Title:** Pelton Round Butte Hydroelectric Project, FERC Project No. 2030-036, Oregon
- b. **Subject:** Final Environmental Impact Statement
- c. **Lead Agency:** Federal Energy Regulatory Commission
- d. **Abstract:** Portland General Electric (PGE) and the Confederated Tribes of the Warm Springs Reservation of Oregon (Tribes) jointly filed an application for a new license for the existing 366.82-megawatt Pelton Round Butte Hydroelectric Project, located on the Deschutes River in north central Oregon.

The Pelton Round Butte Project consists of three developments: the Round Butte, Pelton, and Reregulating developments. The project occupies lands of the Deschutes National Forest, Mt. Hood National Forest, Willamette National Forest, Crooked River National Grassland, Bureau of Land Management, and Tribal lands of the Warm Springs Reservation of Oregon. The project is operated as a modified run-of-river project, where inflows to the Round Butte development generally match outflows from the Reregulating development.

The Deschutes River is part of the lower Columbia River drainage basin. The reach downstream of the project supports native anadromous salmonids, including spring-run and fall-run Chinook salmon and summer-run steelhead. Rivers upstream of the project support bull trout, redband trout, and other native species. Lake Billy Chinook supports an important fishery for kokanee salmon and trophy bull trout. State fish and wildlife agencies aspire to restore anadromous fish to areas upstream of the project through fish passage and habitat restoration. Land use in the project area is mostly rural with large areas of natural forest, open pastures, and low-density residential. Development includes timber harvesting, grazing, and recreational sites.

Key issues associated with relicensing this project are: restore and enhance runs of anadromous fish; improve dissolved oxygen concentrations downstream of the Round Butte dam; enhance local recreational opportunities; protect and enhance local vegetation and wildlife, including five federally listed species; and protect and enhance land use, including the local economy.

**The staff's recommendation is to relicense the project as proposed, with additional measures to protect and enhance environmental resources, including conducting recreational use surveys every 6 years to determine future recreational needs, and developing and implementing a landscape management plan to enhance the aesthetic resources of the project.**

**e. Contact: Nicholas Jayjack  
Federal Energy Regulatory Commission  
Office of Energy Projects  
888 First Street, N.E.  
Washington, D.C. 20426  
(202) 502-6073**

**f. Transmittal: This final EIS prepared by the Commission's staff on the hydroelectric license application filed jointly by PGE and the Tribes for the existing Pelton Round Butte Hydroelectric Project (Project No. 2030-036) is being made available to the public on or about June 2004, as required by the National Environmental Policy Act of 1969<sup>1</sup> and the Commission's Regulations Implementing the National Environmental Policy Act (18 CFR Part 380).**

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<sup>1</sup> National Environmental Policy Act of 1969, as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, §4(b), September 13, 1982).

## FOREWORD

The Federal Energy Regulatory Commission (Commission), pursuant to the Federal Power Act (FPA)<sup>2</sup> and the U.S. Department of Energy Organization Act,<sup>3</sup> is authorized to issue licenses for up to 50 years for the construction and operation of non-federal hydroelectric developments subject to its jurisdiction, on the necessary conditions:

That the project adopted...shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in Section 4(e)...<sup>4</sup>

The Commission may require such other conditions not inconsistent with the FPA as may be found necessary to provide for the various public interests to be served by the project.<sup>5</sup>

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<sup>2</sup> 16 U.S.C. §§791(a)–825(r), as amended by the Electric Consumers Protection Act of 1986, Public Law 99-495 (1986) and the Energy Policy Act of 1992, Public Law 102-486 (1992).

<sup>3</sup> Public Law 95-91, 91 Stat. 556 (1977).

<sup>4</sup> 16 U.S.C. §803(a).

<sup>5</sup> 16 U.S.C. §803(g).



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Conditions filed by other agencies, the Tribes, and NGOs all indicate support for construction of the proposed SWW facility, and several provided conditions or recommendations pertaining to monitoring requirements, which we discuss and evaluate in section 3.4.2.2, *Flow Monitoring and Operational Compliance*, in *Water Quantity*. Several agencies also included conditions or recommendations that specify different levels of effort be directed toward habitat restoration. Since these measures are directed primarily at improving conditions for aquatic resources, we evaluate them later in section 3.6, *Aquatic Resources*.

We evaluate the effects of measures proposed to improve water quality in the following sections.

### 3.5.2.1 Water Temperature

The standard set by the Tribes for salmonid spawning is 12.8°C (55.0°F) maximum, and the standard for all life stages of bull trout is 10.0°C (50.0°F) maximum. The bull trout standard applies year-round within the project reservoirs at the depths in which bull trout occur or would be expected to occur under natural conditions, and in the lower Deschutes River downstream to approximately Maupin (RM 58). Salmonid spawning and rearing criteria apply in the lower Deschutes River downstream of Maupin, and the timing is dependent on the periodicity of these salmonid life stages.<sup>36</sup>

ODEQ revised its temperature standard in March 2004 (Oregon Administrative Rule Chapter 340-41) to include more species, to vary with time of year, and to be geographically explicit. Standards that apply to the Deschutes River basin are listed below:

1. Salmon and steelhead spawning use: the 7-day-average maximum temperature may not exceed 13.0°C (55.4°F).
2. Core coldwater habitat use: the 7-day-average maximum temperature may not exceed 16.0°C (60.8°F).
3. Salmon and trout rearing and migration: the 7-day-average maximum temperature may not exceed 18.0°C (64.4°F).
4. Migration corridor: the 7-day-average maximum temperature may not exceed 20.0°C (68.0°F).
5. Bull trout spawning and juvenile rearing: the 7-day-average maximum temperature may not exceed 12.0°C (53.6°F).

<sup>36</sup> Zimmerman and Reeves (1999) report that steelhead spawn in the lower Deschutes River from mid-March through May, and resident rainbow trout spawn from mid-March through August. Fall Chinook salmon spawn from late September through November (Witty, 1999).

under NEPA, ESA, and the Wild and Scenic Rivers Act including planning, surveys, implementation and monitoring.

BIA preliminary 4(e) condition no. 7 specifies an extensive gravel monitoring and augmentation program, including initial placements of 250 to 1,000 cubic yards of gravel at each of three initial gravel augmentation sites. BIA’s recommendation includes the following elements: (1) a baseline assessment of gravel habitat between the Reregulating dam and the confluence with the Warm Springs River; (2) development of an initial plan for adding between 250 and 1,000 cubic yards of gravel at each of three sites; (3) submittal of a 3-year gravel augmentation report; (4) continuation of gravel augmentation for the term of any new license issued; (5) submittal of annual work plans; (6) monitoring the extent and condition of spawning gravels at a minimum ten sites including the gravel augmentation sites; (7) submittal of monitoring reports reporting conditions prior to augmentation and then at 5-year intervals starting 5 years after issuance of any new license, (8) re-surveying cross-sections and conducting tracer gravel studies each year when flows exceed 6,000 cfs for 2 days or more; (9) sampling of suspended and bedload sediment from the Warm Springs Bridge during all flows that exceed 6,000 cfs including at least 5 samples per event; and (10) filing of an annual report, including a description of any proposed amendments to the gravel augmentation plan, which would be developed in consultation with the BIA and the Tribes’ BNR.

*Our Analysis*

In their response to AIR no. 12, the Joint Applicants reviewed available information on fall Chinook salmon spawning in the lower Deschutes River, and evaluated five hypotheses that could explain why fewer fish have spawned upstream of Sherars Falls since the early 1980’s. A summary of their evaluation of each hypothesis is provided below.

*Hypothesis 1. The decrease in spawning in the upper portion of the lower Deschutes River is caused by a loss of spawning gravel below the project.*

The Joint Applicants provide several lines of evidence that do not support this hypothesis. First, the geomorphic studies conducted by the Joint Applicants indicate that the project has had only minor effects on the streambed, and spawning size gravels are still abundant in the reach. Rainbow trout continue to spawn in large numbers in this reach,<sup>58</sup> using the smaller fraction of gravels that would be the most vulnerable to

---

<sup>58</sup> Zimmerman and Reeves (1999) enumerated redds at all steelhead and rainbow trout spawning locations in the 10 miles between the Reregulating dam and the mouth of Trout Creek early in 1995 and at five study sites during the next 2 years. At these five sites, a total of 1,430, 1,504, and 1,241 rainbow trout redds were observed in 1995, 1996, and 1997, respectively. Three of these sites were located between the Reregulating dam and Shitike Creek and two were located downstream of Shitike Creek.

***Pelton Round Butte Project  
Settlement Agreement***

***A P P E N D I X E***

***FINAL SECTION 7(A) DETERMINATIONS,  
WILD AND SCENIC RIVERS ACT  
for the  
PELTON ROUND BUTTE HYDROELECTRIC PROJECT:***

***Lower Deschutes Wild and Scenic River  
Middle Deschutes and Lower Crooked River Wild and  
Scenic Rivers  
Metolius River Wild and Scenic River***

**Pelton Round Butte Project – FERC No. 2030**

**July 2004**

## APPENDIX E

### FINAL SECTION 7(a) DETERMINATIONS, WILD AND SCENIC RIVERS ACT

Pelton Round Butte Hydroelectric Project #2030  
July 2, 2004

#### Introduction

The Pelton Round Butte Hydroelectric Project is located on the east side of the central Cascade mountain range in Jefferson County, Oregon, approximately 15 miles west of the city of Madras, Oregon. The project consists of a series of three dams on the Deschutes River that impound the canyons of the Deschutes, Metolius and Crooked River. The three dams include the upstream most Round Butte Dam, Pelton Dam and the Reregulating Dam.

The accompanying report analyzes the effects of the Pelton Round Butte Hydroelectric Project as it is proposed to operate under the License Conditions recommended in the Settlement Agreement (July 13, 2004) for Pelton Round Butte Hydroelectric Project #2030. Specifically, the analysis considers whether the project proposal will invade the area or unreasonably diminish the scenic, recreational, fish or wildlife values present at the date of the lower Deschutes WSR designation.

On November 12, 2002, the USDI Bureau of Land Management and USDA Forest Service filed preliminary Section 7 determinations with their preliminary conditions, prescriptions, and recommendations in response to the Commission's August 12, 2002, Notice of Application Ready for Environmental Analysis and Soliciting Comments, Recommendations, Terms and Conditions, and Prescriptions for the Project (REA notice). At that time, the agencies reserved the authority to modify the preliminary determinations in the event that alternatives considered by the Commission modified the project or otherwise created impacts to the Wild and Scenic River not previously addressed.

The License Conditions contained in the Settlement Agreement resulted in a change to the minimum flows assessed in the preliminary determination for the Lower Deschutes Wild and Scenic River. No changes were made to the Middle Deschutes, Crooked, or Metolius Wild and Scenic River preliminary Section 7 determinations.

Should the Commission modify the License Conditions recommended in the Settlement Agreement, the USDI BLM and the USDA Forest Service continue to reserve the authority to modify these determinations in the event that license conditions imposed by the Commission are materially different from those proposed in this Settlement Agreement such that the project creates or results in impacts to the Wild and Scenic River not previously addressed

## Lower Deschutes Wild and Scenic River

### **Background**

With the passage of the Omnibus Oregon Wild and Scenic Rivers Act of 1988, Congress designated the lower 100 miles of the Deschutes River as a recreational river area. The 100 mile segment from the Pelton Re-regulating Dam to the confluence with the Columbia River was recognized as having outstandingly remarkable recreation, fisheries, wildlife, cultural, geological, scenic, and botanical values. The Bureau of Land Management, State of Oregon, and Confederated Tribes of the Warm Springs Indian Reservation are responsible for the administration of the lower Deschutes Wild and Scenic River (WSR) and for protecting the outstandingly remarkable values. The same 100-mile segment was also designated as an Oregon State Scenic Waterway in 1970.

### **Lower Deschutes WSR:**

The outstandingly remarkable values of the Lower Deschutes WSR are: recreation, fisheries, wildlife, cultural, geological, scenic, and botanical. More specifically from the Lower Deschutes WSR Environmental Impact Statement, Section III:

*Recreational Values* – The Deschutes offers diverse opportunities for recreation which attract visitors from many states and a few foreign countries. The fishery for native redds (rainbow) trout, steelhead and salmon has been internationally known for many years. Whitewater boating participation has grown rapidly in the last ten years. The river provides a stable, high-volume flow, available for recreation all year long. Within its 100-mile length, there are distinct segments favored for relaxed, overnight camping and fishing floats, one-day white water adventures and guided or nonguided fishing trips. The climate cooperates by offering generally sunny weather during the high-use season.

*Fishery Values* – The lower Deschutes River has an internationally known fishery for resident rainbow trout, anadromous steelhead trout, and chinook salmon. Even though production of wild anadromous fish is depressed, the river is an important producer of steelhead and chinook salmon for the Columbia River system and the Northwest Region. There is also a regionally unique run of wild sockeye salmon that is sustained by the incidental passage of kokanee smolts through the turbines at the Pelton/Round Butte hydroelectric complex. Runs of anadromous fish sustain an important subsistence fishery for Native Americans. The river provides extensive spawning and rearing areas for both resident and anadromous fish. Good water quality conditions contribute significantly to the condition of the fishery. Two hatcheries are located in the subbasin and supplement the runs of chinook and steelhead.

*Wildlife Values* – The Deschutes River Canyon provides habitat for approximately 300 different species of wildlife. Most of these utilize riparian habitats adjacent to the river. This provides outstanding opportunities for viewing many species of wildlife include songbirds, waterfowl, mink, heron, mule deer and many reptiles, amphibians, and other small mammals.



Two birds found in the canyon have been listed by Federal and State agencies as Threatened or Endangered. They are the bald eagle, *Haliaeetus leucocephalus* and the peregrine falcon, *Falco peregrinus anatum*. The falcon currently passes through the area and is expected to begin nesting in the canyon as populations continue to increase in the Columbia basin in the future. The Osprey, *Pandion haliaetus*, which is listed as sensitive in Oregon, is also known to nest in the canyon.

Two species of molluscs (snails) found in the planning area are Federal candidates for listing as Threatened. They are The Dalles sideboard snail, *Monadenia fidelis minor* and the shortface lanx *Fisherola nuttalli nuttalli*.

*Cultural Resource Values - Prehistoric* - Humans have occupied the Deschutes Canyon area for at least 10,000 years. One hundred thirty-five prehistoric sites have been recorded in the Lower Deschutes River canyon, and it is believed that many others will yet be found. Most common are habitation sites. One of these, at Macks Canyon campground, was excavated by University of Oregon archaeologists in the late 1960s and is now listed on the National Register of Historic Places. Sherars Falls, a point of difficult passage for anadromous fishes, is an important traditional fishing station for Native Americans.

*Cultural Resource Values – Historic* – Exploration and fur trapping by Euro-Americans began in the Deschutes Canyon in the early 19<sup>th</sup> century. Other historic activities that have been documented include use of the Oregon Trail, road and railroad construction and settlement. In the Deschutes canyon 38 historic sites have been documented, most of them associated with early railroad construction.

*Geologic Values* – The Deschutes River flows through the geomorphic unit called the Deschutes-Umatilla Plateau, the main part of which slopes northward from 4,000-foot levels in the mountains of Central Oregon to the 400-foot elevation along the Columbia River. The rocks are mostly Columbia River basalt, nearly 2,000 feet thick. The lava flows that make up the plateau occurred over millions of years and formed in distinct layers of various depths.

*Scenic Values* – The Lower Deschutes River Canyon contains a diversity of landforms, vegetation and color. The river, having carved a canyon nearly 2,000 feet deep in many locations out of rugged Columbia River basalt flows, provides a dramatic and diverse landscape. The clear water of the river framed by the green riparian vegetative fringe creates a stark contrast to the often barren and broken reddish and brown cliffs and hillsides of the canyon. The river provides a boater with a moving platform for viewing the ever-changing scene. While transportation corridors exist (roads and railroads), and occupational and rural development has occurred in several areas, they are overshadowed by the magnitude and beauty of the river and canyon character.

*Botanical Values* – Plant communities in the Deschutes River Canyon fall into four broad categories. In the high desert uplands there are big sagebrush, juniper-big sagebrush and bunchgrass types. Along the river there is a thin band of riparian vegetation dominated by alders. Within the canyon there are also six special status plant species (known or suspected to occur). These are: *Astragalus howellii v. howellii*, *Astragalus tyghensis*, *Cyperus rivularis*,

*Lomatium farinosum v. hambleniae*, *Mimulus jungermannioides* and *Talinum spinescens*. *Astragalus tyghensis* is the only species that is presently a Federal candidate species for listing as threatened and endangered.

**Existing Project Description:**

The Pelton Round Butte Hydroelectric Project (FERC #2030) is located on the Deschutes River, approximately 8 miles west of the city of Madras, Oregon. Pelton Round Butte consists of a three-dam complex with associated powerhouses. Individual descriptions follow.

Round Butte Dam is a 440-foot high rock fill dam that impounds Lake Billy Chinook, a 4,000 surface acre reservoir. The powerhouse at Round Butte Dam has a capacity of 300 MW. Pelton Dam is a 204-foot high, concrete radial arch structure, and impounds Lake Simtustus, a 540 surface acre reservoir. The Pelton powerhouse has a generation capacity of 108 MW. The lowest of the three dams is the Pelton Reregulating Dam, an 88 foot high concrete and rock filled structure with a powerhouse capacity of 19 MW. The Reregulating Dam impounds the 190 surface acre Reregulating Reservoir. The three dams and powerhouses are jointly owned and operated by PGE and the Confederated Tribes of Warm Springs. The two upper dams are managed as peaking facilities with the lower dam managed as a reregulating facility and operated to provide both energy production and reregulate flows in the lower Deschutes River. Additional project structures include fish facilities such as the Pelton Fish Ladder, currently used for rearing spring chinook, retired fish passage facilities at the Round Butte and Pelton dams, Round Butte Hatchery at the base of Round Butte Dam, and the Bethel-Round Butte transmission line which extends 100 miles from the project over the Cascade Mountains to PGE's substation near Salem.

The three-dam complex, powerhouses, and operation of project facilities significantly affect fish resources of the Deschutes River basin. Wild fish populations which presently inhabit the Deschutes River and tributaries in the lower basin below the project include spring and fall chinook salmon, summer steelhead and native redband trout, bull trout, Pacific lamprey and mountain whitefish. Resident salmonids above the project include redband trout, bull trout, brown trout, and kokanee.

The project is run in a modified run of the river mode, with Round Butte Dam and Pelton Dam operations managed for peak generation and the Reregulating Dam managed to release steady flow to the river downstream. Outflow from the Reregulating Dam is managed to generally mimic inflow to the project. Ramping rates are not specified in the existing license but are the result of an agreement between PGE and recreational anglers and guide/outfitters. Under this agreement, ramping rates are not to exceed 0.1 ft/hr and 0.4ft/day in the winter and 0.1 ft/hr and 0.2 ft/day in the summer. The reservoir level of Lake Billy Chinook (LBC) is limited to within one foot of full pool from June 16<sup>th</sup> to September 15<sup>th</sup>. Winter reservoir levels are limited to an 80ft drawdown, but it is usually only 20ft or less. Fish passage at the project was attempted when the dams were built but was abandoned when downstream passage for juvenile smolts through LBC was shown to be unsuccessful in the late 1960's. A hatchery was built at the base of Round Butte Dam to mitigate the loss of fish passage at the complex. Cooperative fish habitat projects were completed jointly with Portland General Electric, ODFW and USFS in the Metolius River and its tributaries in the 1980s and 1990s. Wood from the Metolius River was



**Confederated Tribes of the Warm Springs  
Reservation of Oregon**

P. O. Box 960 • Warm Springs, OR 97761



**Portland General Electric Company**

121 S.W. Salmon Street • Portland, OR 97204

April 1, 2016

ES-98-2016

**ELECTRONICALLY FILED**

Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: Project No. 2030 – Pelton Round Butte Hydroelectric Project  
Article 433 – Lower River Gravel Study  
2015 Final Report Lower River Gravel Study: Pelton Round Butte  
Hydroelectric Project and Final Lower Deschutes River Gravel Study Five  
Year Review**

Dear Secretary Bose:

Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon are the Joint Licensees for the Pelton Round Butte Hydroelectric Project (Project No. 2030). On June 21, 2005, the Commission issued an Order Approving Settlement and Issuing New License, *Portland General Electric Company & Confederated Tribes of the Warm Springs Reservation of Oregon*, 111 FERC ¶ 61,450 (2005), *order on reh'g* 117 FERC ¶ 61,112 (2006).

Article 433 of the license required the Joint Licensees to file with the Commission, within one year of license issuance, a lower river gravel study plan to evaluate gravel mobility, supply, and use by spawning salmonids in the lower Deschutes River from RM 100 to RM 87.3. The Joint Licensees filed the Gravel Study Plan on June 8, 2006. The Commission approved the plan on December 12, 2006, *Portland General Electric Company & Confederated Tribes of the Warm Springs Reservation of Oregon*, 117 FERC ¶ 62,260 (2006). On September 29, 2008, May 19, 2011, and May 5, 2014, the Commission approved amendments of the approved study plan, *Portland General Electric Company & Confederated Tribes of the Warm Springs Reservation of Oregon*, 124 FERC ¶ 62,242 (2008); *Portland General Electric Company & Confederated Tribes of the Warm Springs Reservation of Oregon*, 135 FERC ¶ 62,154 (2011); *Portland General Electric Company & Confederated Tribes of the Warm Springs Reservation of Oregon*, 147 FERC ¶ 62,087 (2014).

Item A 000195

**Exhibit E - Page 30 of 58**

Project No. 2030 - Oregon  
Pelton Round Butte Hydroelectric Project

Article 433 of the license requires the Joint Licensees to file with the Commission, after five years of study, annual monitoring results of the gravel study and the results and recommendations of a three-member review panel consisting of experts in geomorphology and fisheries selected by the Licensees, in consultation with the Fish Committee. The Licensees shall request that the expert review panel believes: (1) the gravel study should be continued; (2) the licensees should implement a long-term gravel augmentation program, or (3) no further study or augmentation is needed. As detailed in the Lower Deschutes River Gravel Study Review, the expert panel believes that further study including additional experimental augmentation is necessary and, as required, the Fish Committee was notified of that conclusion. After consideration of the review, the Fish Committee believes the expert panel recommendation is appropriate. Therefore in 2016, the licensees shall, in consultation with the Fish Committee, begin to develop new a plan for Commission approval to implement such a program.

These recommendations have been prepared in consultation with the Fish Committee and copies of this document have been served on the Fish Committee. Accordingly, enclosed for filing with the Commission are the following:

- Attachment A: Lower River Gravel Study: Biological and Geomorphic Components 2007 through 2014
- Attachment B: Gravel Permeability and Intergravel Dissolved Oxygen Monitoring Report for 2008, 2011, 2012, and 2014
- Attachment C: Final Lower Deschutes River Gravel Study Review prepared by the expert panel.
- Attachment D: Lower Deschutes River Macroinvertebrate & Periphyton Study
- Appendix A: Consultation for the selection of the expert panel
- Appendix B: Consultation on the recommendations of the expert panel

If you have any questions about this filing, please contact me at the number indicated below.

Sincerely,



Scot Lawrence  
Project Manager  
Environmental Compliance & Licensing



**Pelton Round Butte Project (FERC 2030)  
License Article 433: Lower River Gravel Study  
2007 Redband/Steelhead Spawning Surveys  
and 2008 Work Plan**



**Prepared by:**

**Bob Spateholts  
Portland General Electric**

**March 2008**

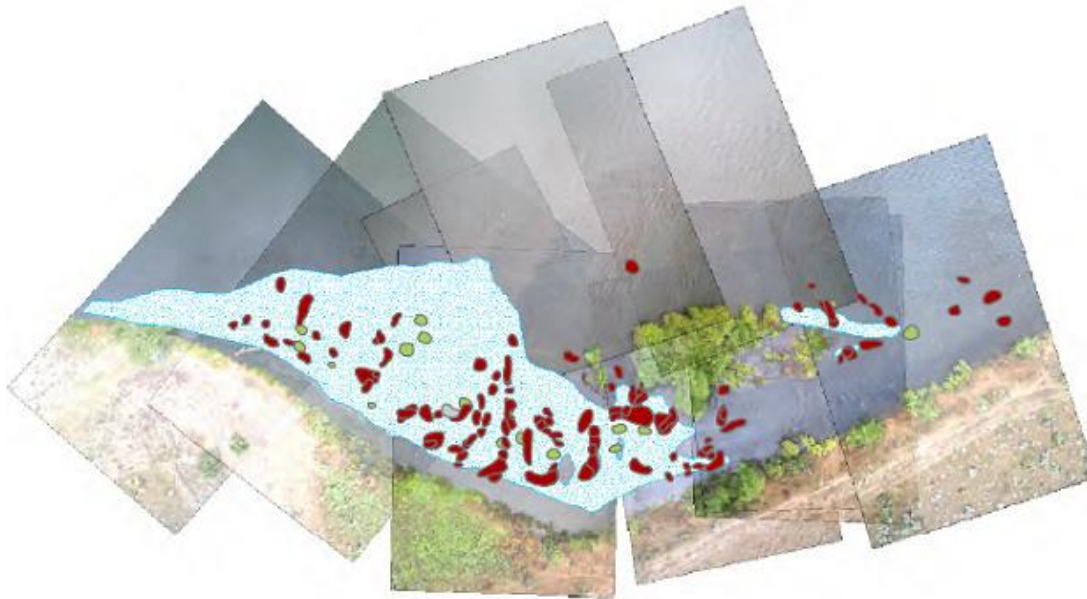
majority of redds were observed at the three sites downstream of Shitike Creek, and in 2007 there were nearly identical numbers of trout redds observed upstream and downstream of Shitike Creek.

**Table 2.** Summary of steelhead and redband trout redds observed at six gravel bars on the Lower Deschutes River, April to June 2006.

Date	Site	Steelhead			Redband Trout		
		Aggregate	Single	Total # Redds	Aggregate	Single	Total # Redds
04/19/2007	Dry Creek		4	4	1	1	2
	Jackson's		6	6			
	Jason Smith's		1	1			
<b>04/19/2007 Total</b>			<b>11</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>2</b>
05/17/2007	Dizney		6	6	3	11	14
	Dry Creek					2	2
	Jackson's		5	5		2	2
	Jason Smith's		1	1			
	Mill Island	1	6	7		4	4
<b>05/17/2007 Total</b>		<b>1</b>	<b>18</b>	<b>19</b>	<b>3</b>	<b>19</b>	<b>22</b>
06/20/2007	Dizney				2	42	44
	Dry Creek				6	19	25
	Jackson's				1	4	5
	Jason Smith's				4	1	5
	Mill Island				5	22	27
	Morrisons					9	9
<b>06/20/2007 Total</b>					<b>18</b>	<b>97</b>	<b>115</b>
<b>Grand Total</b>		<b>1</b>	<b>29</b>	<b>30</b>	<b>22</b>	<b>117</b>	<b>139</b>

It is unknown if differences between the two years are indicative of any difference in fish abundance or changes in habitat. Timing of the redd surveys, weather and flows were different between the two years. It is likely that a major portion of the redband trout spawning activity occurred after the June 20 survey in 2007. Spawning activity was observed until late July at the survey sites. The final pass of surveys in 2008 should be scheduled in late June to early July to include the peak of redband spawning activity. More than three surveys may be needed. After the selective water withdrawal (SWW) structure at Round Butte Dam is activated in the spring of 2009, the temperature regime of the lower Deschutes River, and as a result spawn-timing of steelhead and redband trout, will likely change. Scheduling of surveys in 2009 and beyond will

**Pelton Round Butte Project (FERC 2030)  
License Article 433: Lower River Gravel Study  
Biological Monitoring Component  
2008 Salmonid Spawning Surveys and 2009 Work Plan**



**Prepared by:**

**Bob Spateholts  
Portland General Electric**

**On Behalf of**

**Portland General Electric Company**

**And**

**The Confederated Tribes of the Warm Springs Reservation of Oregon**

**May 2009**



### 2008 Redband and Steelhead Trout Spawning Surveys

The redband/steelhead spawning sites were surveyed five times (31 March, 14 April, 12 May, 13 June, and 1 July) in 2008. The total numbers of redds observed by species, site and pass are summarized in Table 2. Appendices 1-6 show LEAP basemaps with overlays of mapped spawning area (Stillwater Sciences 2009), redband trout redds, and steelhead trout redds for the Jackson's, Dizney, Jason Smiths, Mill Island, Morrisons, and Dry Creek sites, respectively.

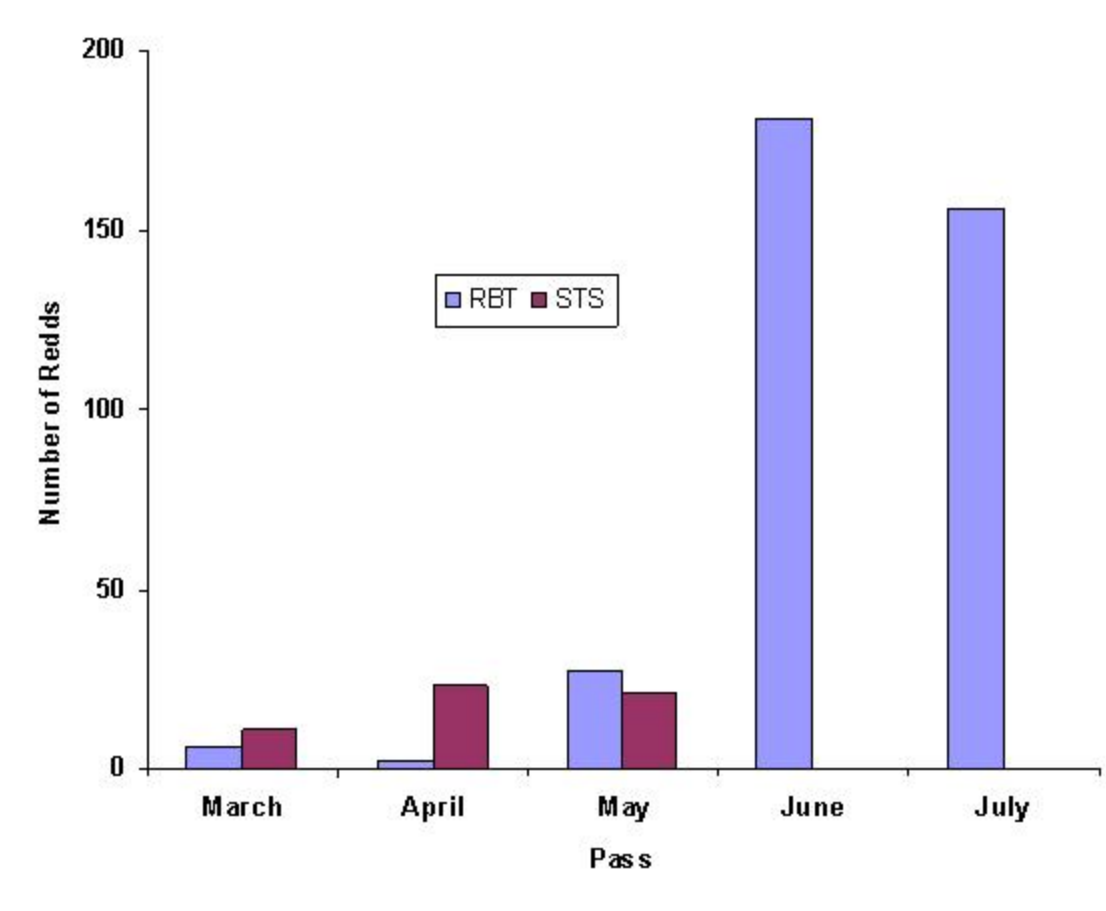
**Table 2.** Summary of numbers of steelhead and redband trout redds observed at six gravel bars on the Lower Deschutes River, April to July 2008.

Upstream/ Downstream of Shitike Creek	SITE	Pass	Redband Trout			Steelhead			Grand Total
			Aggregate	Single	Total	Aggregate	Single	Total	
UP	Jacksons	31-Mar					1	1	1
		14-Apr					4	4	4
		12-May		1	1		2	2	3
		13-Jun	7	11	18				18
		01-Jul	1	12	13				13
		Total	8	24	32		7	7	39
		Dizney	31-Mar					2	2
		14-Apr					8	8	8
		12-May	3	8	11		5	5	16
		13-Jun	39	9	48				48
		01-Jul	45	2	47				47
		Total	87	19	106		15	15	121
	Jason Smiths	14-Apr					3	3	3
		12-May		4	4		1	1	5
		13-Jun	10	5	15				15
		01-Jul	11	9	20				20
		Total	21	18	39		4	4	43
UP Total			116	61	177		26	26	203
DOWN	Dry Creek	31-Mar	3	3	6		4	4	10
		14-Apr		2	2	1	5	6	8
		12-May	4	6	10		6	6	16
		13-Jun	26	14	40				40
		01-Jul	32	6	38				38
		Total	65	31	96	1	15	16	112
		Mill	31-Mar					3	3

Upstream/ Downstream of Shitike Creek	SITE	Pass	Redband Trout			Steelhead			Grand Total
			Aggregate	Single	Total	Aggregate	Single	Total	
	Island								
		14-Apr					1	1	1
		12-May		1	1		5	5	6
		13-Jun	34	19	53				53
		01-Jul	29	3	32				32
		Total	63	23	86		9	9	95
	Morrisons	31-Mar					1	1	1
		14-Apr					1	1	1
		12-May					2	2	2
		13-Jun	3	4	7				7
		01-Jul	2	4	6				6
		Total	5	8	13		4	4	17
DOWN Total			133	62	195	1	28	29	224
Grand Total			249	123	372	1	54	55	427

A total of 55 steelhead redds (1 aggregate, 54 single) and 372 (249 aggregate, 123 single) redband trout redds were observed in the five surveys (Table 2). Spawning activity for steelhead trout occurred from March through May, with the greatest number of new redds (23) observed on the 23 April survey (Figure 2). Redband trout spawning activity was observed on all surveys, with the greatest number of new redds (181) observed on the June 13 survey (Figure 2). Redband and steelhead trout redds were observed in close proximity at all sites (Appendices 1-6).

During each survey, microhabitat parameters of up to ten redds were measured at each site using protocols described by Zimmerman and Reeves (1999). Redd length was measured parallel to the current from the upstream end of the egg pit to the downstream end of tailspill. Redd width was the widest point. Water depth was recorded over the egg pit portion of the redd. Velocity was measured with a flow meter over the egg pit at 60% of redd depth (from the water surface). Microhabitat measurements for redband and steelhead trout are summarized in Table 3.



**Figure 2.** Number of new redband and steelhead redds counted by pass for six Deschutes River spawning survey sites, March-July 2008.

Since unknown numbers of individual redds were included in aggregate redds, length and width parameters were analyzed for single redds only. Steelhead trout redds were longer (mean 1.16 m) and wider (mean 0.78 m) than redband trout redds (mean redd length 0.72 m mean width 0.54m) (Table 2). Mean depth of steelhead redds (0.57m) was greater than redband trout (0.49m). Mean velocity was similar for steelhead (0.58 m/sec) and redband trout (0.57 m/sec). The range of depths and velocities observed for trout redds in 2008 was very similar to habitat suitability criteria used by Stillwater Sciences (2009) for mapping potential spawning areas at the six study sites redband trout were observed in slightly lower velocity and shallower depth than mapping criteria specified (Table 3). Observed differences were probably smaller than accuracy of field measurements would detect.

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Biological Monitoring Component  
2009 Salmonid Spawning Surveys and 2010 Work Plan**



**Prepared by:**

**Bob Spateholts**

**Portland General Electric Company**

**On behalf of**

**Portland General Electric Company**

**and**

**The Confederated Tribes of the Warm Springs Reservation of Oregon**

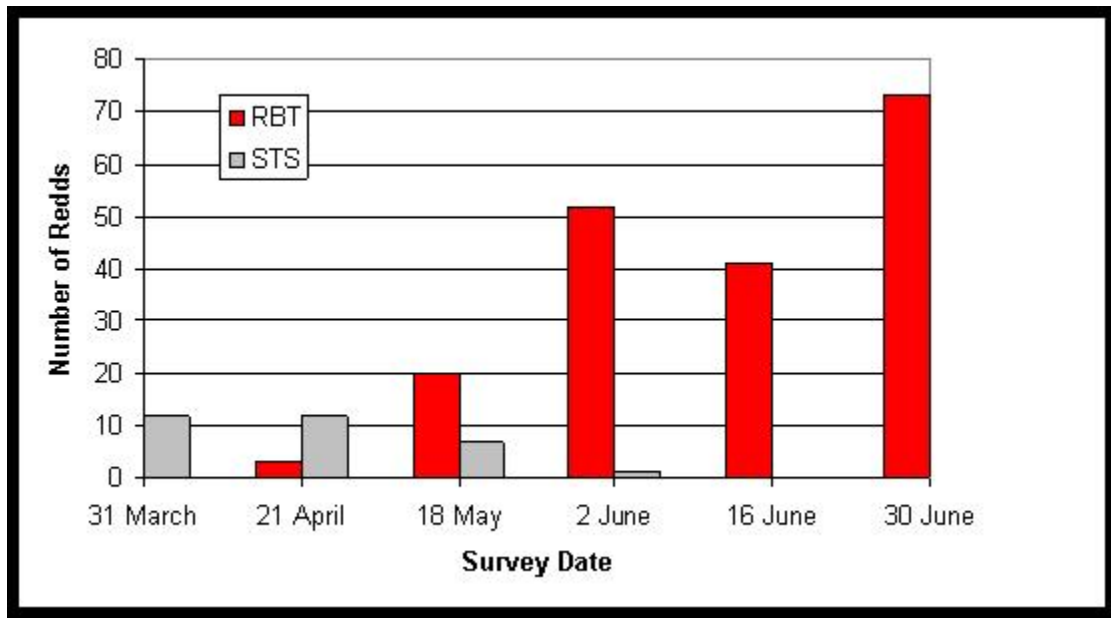
**March 2010**

the greatest number of new redds (12) observed on 21 April (Figure 2). Redband trout spawning activity was observed from April-July, with the greatest number of new redds (73) observed on the June 30-July 1 survey (Figure 2).

**Table 2.** Numbers of steelhead and redband trout redds observed at six gravel bars on the Lower Deschutes River, April to July 2009.

Upstream/ Downstream Shitike Creek	Site	Pass	Redband Trout			Steelhead			Grand Total	
			Aggregate Redds	Single Redds	Total Redds	Aggregate Redds	Single Redds	Total Redds		
Upstream	Jacksons	31 March					7	7	7	
		21 April		1	1				1	
		18 May	1	1	2				2	
		2 June	1	1	2				2	
		16 June	1	8	9				9	
		30 June	2	1	3				3	
		Total	5	12	17		7	7	24	
		Dizney	31 March					2	2	2
			21 April	1		1		8	8	9
			18 May	5	13	18		4	4	22
2 June	5		11	16				16		
16 June	6		1	7				7		
	30 June	33	1	34				34		
	Total	Total	50	26	76		14	14	90	
Jason Smiths	31 March									
	21 April					2	2	2		
	18 May					3	3	3		
	2 June	2	3	5		1	1	6		
	16 June		1	1				1		
	30 June	7	3	10				10		
	1	Total	9	7	16		6	6	22	
Upstream Total			64	45	109		27	27	136	
Downstream	Mill Island	31 March					1	1	1	
		21 April								
		18 May								
		2 June		4	4				4	
		16 June	11	3	14				14	
		30 June	10		10				10	
		Total	21	7	28		1	1	29	
Morrison's	31 March									
	21 April									
	18 May									
	2 June		2	2				2		
	16 June									
	30 June	1		1				1		

Upstream/ Downstream Shitike Creek	Site	Pass	Redband Trout			Steelhead			Grand Total
			Aggregate Redds	Single Redds	Total Redds	Aggregate Redds	Single Redds	Total Redds	
		Total	1	2	3				3
	Dry Creek	31 March					2	2	2
		21 April		1	1		2	2	3
		18 May							
		2 June	16	7	23				23
		16 June	10		10				10
		30 June	14	1	15				15
		Total	40	9	49		4	4	53
Downstream Total			62	18	80		5	5	85
Grand Total			126	63	189	0	32	32	221



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2009.

The survey protocol for this study is designed to document relative distribution of spawning use by the two subspecies between sites and does not necessarily reflect total steelhead or redband trout spawner abundance. No surveys were made after 1 July (week 27). However, redband spawning has been observed in the Deschutes River through mid-August (week 33) by

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**Prepared by:**

**Bob Spatcholts**

**Portland General Electric Company**

**And**

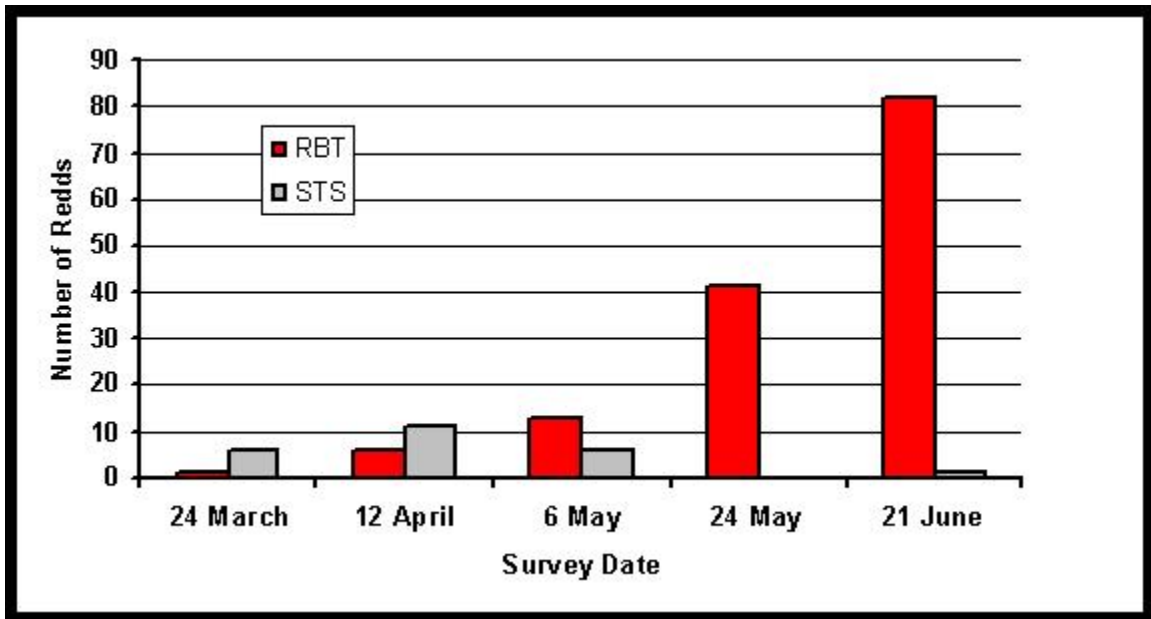
**The Confederated Tribes of the Warm Springs Reservation of Oregon**

**March 2011**

**Table 2.** Numbers of steelhead and redband trout redds observed at six gravel bars in the lower Deschutes River, March to June 2010.

Upstream/ Downstream Shitike Creek	Site	Survey Date	RBT			STS			Grand Total Redds
			Aggregate Redds	Single Redds	Total Redds	Aggregate Redds	Single Redds	Total Redds	
Upstream	Jacksons	3/24		1	1		3	3	4
		4/12		2	2	1	2	3	5
		5/6		3	3				3
		5/24	3	1	4				4
		6/21	5	2	7		1	1	8
		Total	8	9	17	1	6	7	24
	Disney	3/24					1	1	1
		4/12		1	1	2	3	5	6
		5/6	2	3	5		1	1	6
		5/24	9	3	12				12
		6/21	23		23				23
		Total	34	7	41	2	5	7	48
	Jason Smiths	3/24	2		2		1	1	3
		4/12	2		2				2
		5/6	3	2	5				5
		5/24							
		6/21	2	4	6				6
		Total	9	6	15		1	1	16
Total		51	22	73	3	12	15	88	
Downstream	Mill Island	3/24				1		1	1
		4/12							
		5/6					2	2	2
		5/24	4	2	6				6
		6/21	15	3	18				18
		Total	19	5	24	1	2	3	27
	Morrison's	3/24							
		4/12							
		5/6							
		5/24							
		6/21	3		3				3
		Total	3		3				3
	Dry Creek	3/24					1	1	1
		4/12		1	1		2	2	3
		5/6	3		3	1	2	3	6
		5/24	11	3	14				14
		6/21	21	4	25				25
		Total	35	8	43	1	5	6	49
Total		57	13	70	2	7	9	79	
Grand Total			108	35	143	5	19	24	167





**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2010.

Microhabitat data were measured for 17 steelhead redds and 27 single redband trout redds in 2010. Steelhead trout redds covered more area (1.07 m<sup>2</sup>) than redband trout redds (mean area 0.65 m<sup>2</sup>; p<0.05 t-test). Median depth of steelhead redds (0.50 m) was greater than redband trout (0.36 m; p<0.05 rank sum test). Mean velocity was higher for steelhead (0.57 m/s) than redband trout (0.46 m/s; p<0.05 t-test). The range of depths and velocities observed for trout redds in 2010 was very similar to habitat suitability criteria used by Stillwater Sciences (2011) for mapping potential spawning areas at the six study sites (Table 3), as well as data measured by Zimmerman and Reeves (1999).

**Proportion of Redband and Steelhead Trout Redds Upstream of Shitike Creek**

Spawning use was determined by accurately sketching total area of recently constructed redds on LEAP basemaps of the six study sites. Appendices 1-6 show LEAP basemaps with overlays of mapped 2010 suitable gravel, criteria based suitable spawning area, redband trout redds, and

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**On behalf of**

**Portland General Electric Company**

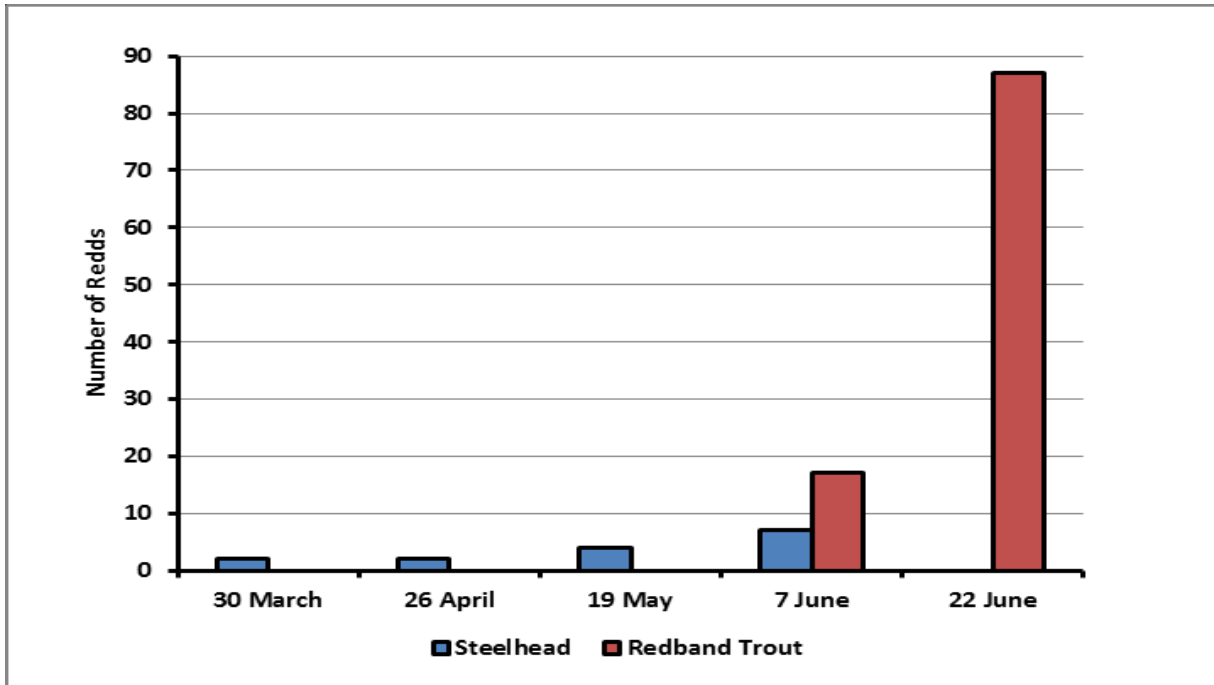
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**March 2012**

**Table 2.** Number and total area of redband trout and steelhead trout redds by site and survey date, Lower River Gravel Study, 2011.

Site	2011 Survey Date	Redband Trout		Steelhead Trout	
		# Redds	Redd Area m <sup>2</sup>	# Redds	Redd Area m <sup>2</sup>
Dry Creek	30-Mar	0	0.0	0	0.0
	26-Apr	0	0.0	1	0.7
	19-May	0	0.0	1	1.4
	7-Jun	4	2.6	1	1.0
	22-Jun	39	57.3	0	0.0
Downstream of Shitike Creek Mill Island	30-Mar	0	0.0	0	0.0
	26-Apr	0	0.0	0	0.0
	19-May	0	0.0	0	0.0
	7-Jun	0	0.0	1	0.9
	22-Jun	10	8.4	0	0.0
Morrison's	30-Mar	0	0.0	0	0.0
	26-Apr	0	0.0	0	0.0
	19-May	0	0.0	0	0.0
	7-Jun	1	1.1	0	0.0
	22-Jun	0	0.0	0	0.0
Dizney	30-Mar	0	0.0	2	2.5
	26-Apr	0	0.0	0	0.0
	19-May	0	0.0	1	2.2
	7-Jun	6	3.3	2	1.0
	22-Jun	28	52.4	0	0.0
Upstream of Shitike Creek Jacksons	30-Mar	0	0.0	0	0.0
	26-Apr	0	0.0	0	0.0
	19-May	0	0.0	1	0.4
	7-Jun	5	11.3	2	4.8
	22-Jun	3	3.6	0	0.0
Jason Smith	30-Mar	0	0.0	0	0.0
	26-Apr	0	0.0	1	1.5
	19-May	0	0.0	1	1.1
	7-Jun	1	1.2	1	0.9
	22-Jun	7	9.6	0	0.0



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2011.

Relative use of spawning sites upstream and downstream of Shitike Creek was calculated from combined total redd area for the five passes at the Jackson’s, Dizney, and Jason Smith’s sites upstream of Shitike Creek; and for the Mill Island, Morrison’s, and Dry Creek sites downstream of Shitike Creek. Likewise, for available habitat, combined total area of suitable spawning gravel and criteria-based suitable spawning habitat (Stillwater Sciences 2012) was compared for the three upstream and three downstream sites. Suitable gravel available at each site is the area with substrate having median particle diameter ranging from 16-45 mm. Suitable criteria based spawning habitat is the total area at each site having suitable gravel, depth (>0.3 m), and velocity (0.25-0.9 m/sec) for redband/steelhead spawning at the measured flow. Target flow for the criteria based mapping is 4,500 cfs. Mapping was conducted on 27-29 June at flows of 4,520-4,890 cfs (Stillwater Sciences 2012).

Total redband and steelhead trout redd area and suitable habitat measurements by site from the 2011 surveys are summarized by site in Table 3. Relative proportion of suitable gravel and

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**Prepared by:**

**Bob Spatcholts**

**On behalf of**

**Portland General Electric Company**

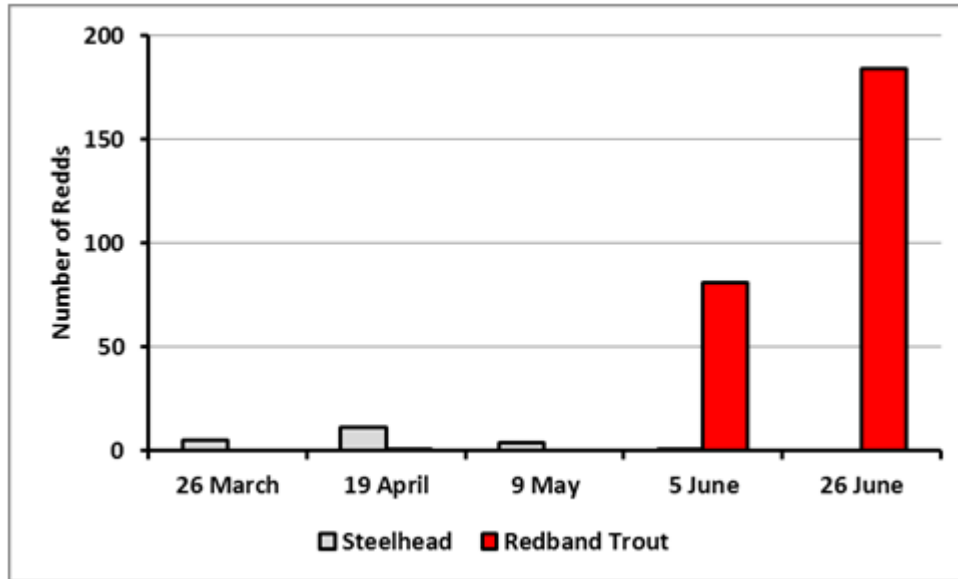
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**March 2013**

**Table 2.** Number and total area of redband trout and steelhead trout redds by site and survey date, Lower River Gravel Study, 2012.

Site	2012 Survey Date	Redband Trout		Steelhead Trout	
		# Redds	Redd Area m <sup>2</sup>	# Redds	Redd Area m <sup>2</sup>
Dry Creek	26-Mar	0	0.0	1	0.8
	19-Apr	0	0.0	1	0.8
	05-May	0	0.0	1	1.5
	05-Jun	38	47.4	0	0.0
	26-Jun	66	70.0	0	0.0
Downstream of Shitike Creek	26-Mar	0	0.0	0	0.0
	19-Apr	0	0.0	1	0.6
	05-May	0	0.0	1	1.5
	05-Jun	22	33.7	1	1.5
	26-Jun	32	25.2	0	0.0
Morrison's	26-Mar	0	0.0	0	0.0
	19-Apr	0	0.0	0	0.0
	05-May	0	0.0	0	0.0
	05-Jun	2	6.0	0	0.0
	26-Jun	6	4.5	0	0.0
	Total	166	186.7	6	6.8
Dizney	26-Mar	0	0.0	3	5.6
	19-Apr	0	0.0	5	4.0
	05-May	0	0.0	2	1.9
	05-Jun	13	10.0	0	0.0
	26-Jun	41	35.9	0	0.0
Upstream of Shitike Creek	26-Mar	0	0.0	0	0.0
	19-Apr	1	0.5	3	4.1
	05-May	0	0.0	0	0.0
	05-Jun	1	0.6	0	0.0
	26-Jun	18	11.7	0	0.0
Jason Smith	26-Mar	0	0.0	1	1.5
	19-Apr	0	0.0	1	0.6
	05-May	0	0.0	0	0.0
	05-Jun	5	6.0	0	0.0
	26-Jun	21	23.1	0	0.0
	Total	100	87.7	15	17.6



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2012.

**Table 3.** Summary of microhabitat measurements for single redband and steelhead trout redds at six Deschutes River spawning survey sites, March-June 2012; and criteria used by Stillwater Sciences (2013) for mapping suitable spawning habitat.

Redd Parameters	Stillwater		
	Sciences (2011) Map Criteria	2012 Redd Surveys- Redband trout	2012 Redd Surveys- Steelhead trout
Total # Single Redds			
Measured	NA	27	19
Mean Redd Length (m)	NA	0.9	1.1
Mean Redd Width (m)	NA	0.7	0.8
Mean Redd Area (m <sup>2</sup> )	NA	0.6	1.2
Mean Redd Depth (m)	>0.3	0.5	0.5
Range Depth (m)	NA	0.26-.70	0.35-0.70
Mean Velocity (m/s)	0.25-0.90	0.6	0.6
Range Velocity (m/s)	NA	.26-.89	.36-.83
Spawning gravel median diameter (mm)	16-45	NA	NA

Microhabitat data were measured for 19 steelhead redds and 27 single redband trout redds in 2012. Steelhead trout redds were significantly larger (mean area 1.2 m<sup>2</sup>) than redband trout redds (mean area 0.6 m<sup>2</sup>; p<0.05 t-test). Mean depths and velocities were not significantly different (p>0.05 t-test). The range of depths and velocities observed for trout redds in 2012 was

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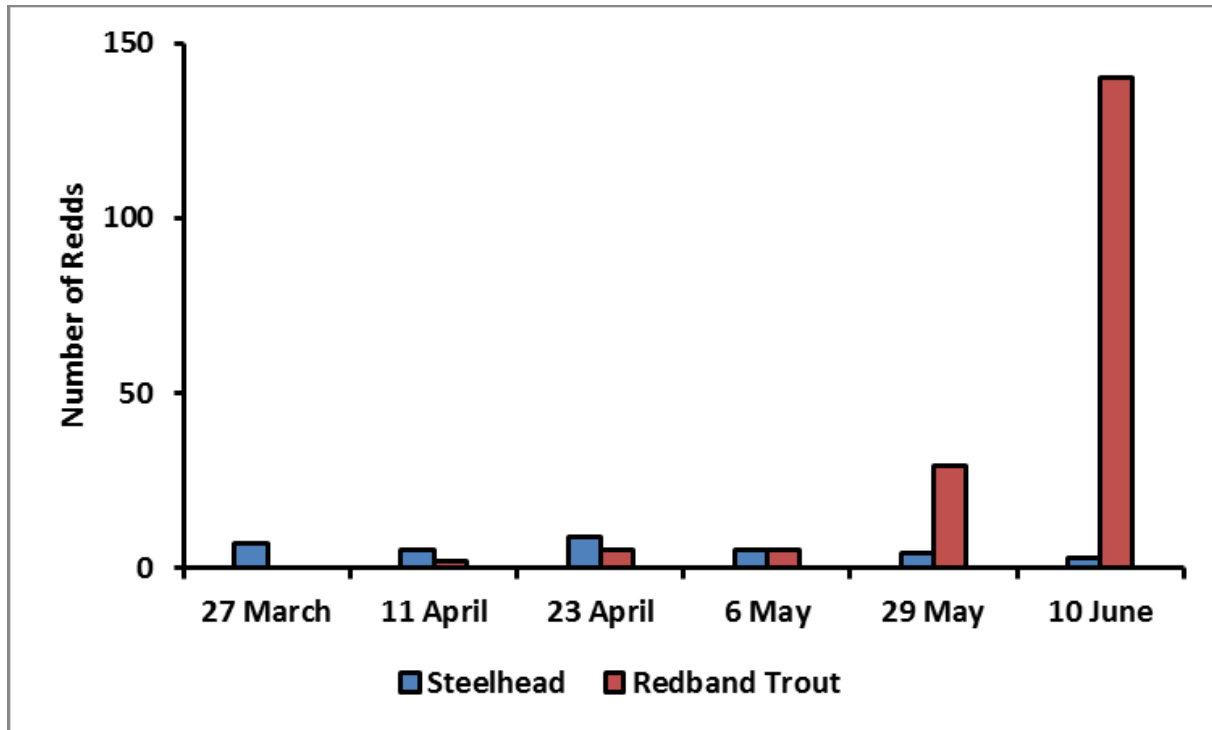
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Bob Spateholts  
On behalf of  
Portland General Electric Company and  
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**March 2014**



**Table 2.** Number and total area of redband trout and steelhead trout redds by site and survey date, Lower River Gravel Study, 2013.

Site	2013 Survey Date	Redband Trout		Steelhead Trout		
		# Redds	Redd Area m <sup>2</sup>	# Redds	Redd Area m <sup>2</sup>	
Downstream of Shitike Creek	27-Mar	0	0.0	0	0.0	
	11-Apr	2	1.5	4	2.6	
	23-Apr	2	1.2	2	2.2	
	7-May	1	1.1	1	1.1	
	29-May	16	11.9	2	1.8	
	11-Jun	52	40.7	0	0.0	
	27-Mar	0	0.0	0	0.0	
	11-Apr	0	0.0	0	0.0	
	23-Apr	0	0.0	0	0.0	
	6-May	1	0.6	0	0.0	
	29-May	1	2.2	0	0.0	
	11-Jun	15	11.5	0	0.0	
	27-Mar	0	0.0	0	0.0	
	11-Apr	0	0.0	0	0.0	
	23-Apr	0	0.0	0	0.0	
	6-May	0	0.0	0	0.0	
29-May	0	0.0	0	0.0		
11-Jun	8	5.8	0	0.0		
	Downstream Total	98	76.3	9	7.7	
Dizney	27-Mar	0	0.0	4	3.4	
	11-Apr	0	0.0	0	0.0	
	23-Apr	2	2.2	4	4.5	
	6-May	0	0.0	3	2.4	
	29-May	10	9.6	0	0.0	
	10-Jun	35	35.3	0	0.0	
	27-Mar	0	0.0	1	0.9	
	11-Apr	0	0.0	1	1.1	
	23-Apr	0	0.0	1	1.2	
	6-May	2	1.0	1	1.1	
Upstream of Shitike Creek	29-May	0	0.0	1	1.0	
	10-Jun	12	13.0	2	2.2	
	27-Mar	0	0.0	2	1.6	
	11-Apr	0	0.0	0	0.0	
	23-Apr	1	0.3	2	1.6	
	6-May	1	0.6	0	0.0	
	29-May	2	3.6	1	0.8	
	10-Jun	18	17.9	1	0.8	
		Upstream Total	83	83.6	24	22.8



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2013.

**Table 3.** Summary of microhabitat measurements for single redband and steelhead trout redds at six Deschutes River spawning survey sites, March-June 2013; and criteria used by Stillwater Sciences (2014) for mapping suitable spawning habitat.

Redd Parameters	Stillwater Sciences (2014) Map Criteria	2013 Redd Surveys- Redband trout	2013 Redd Surveys- Steelhead trout
Total # Single Redds Measured	NA	33	28
Mean Redd Length (m)	NA	0.9	1.2
Mean Redd Width (m)	NA	0.6	0.9
Mean Redd Area (m)	NA	0.5	0.9
Mean Redd Depth (m)	>0.3	0.4	0.5
Range Depth (m)	NA	0.25 - 0.7	0.3 - 0.9
Mean Velocity (m/s)	0.25-0.90	0.4	0.5
Range Velocity (m/s)	NA	0.27 - 0.49	0.16 - 0.78
Spawning gravel median diameter (mm)	16-45	NA	NA

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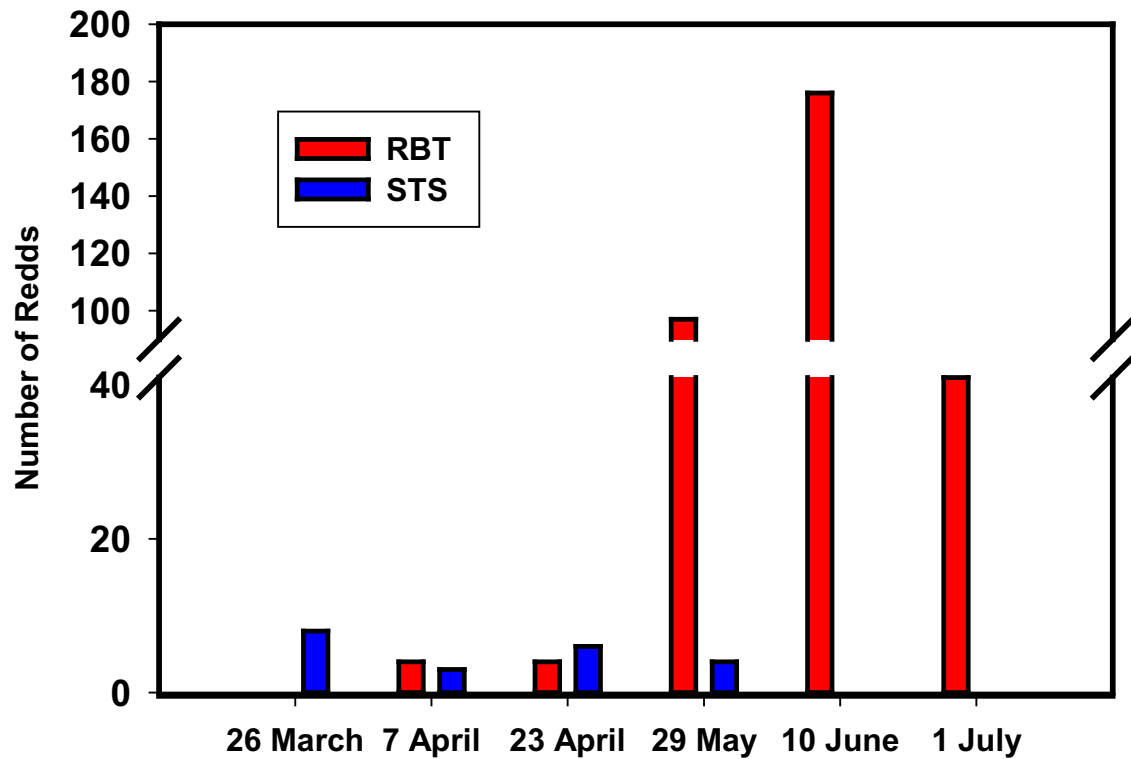
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**Table 2.** Number and total area of redband trout and steelhead trout redds by site and survey date, Lower River Gravel Study, 2014.

Site	2013 Survey Date	Redband Trout		Steelhead Trout	
		# Redds	Redd Area m <sup>2</sup>	# Redds	Redd Area m <sup>2</sup>
Dry Creek	26-Mar	0	0.0	5	4.3
	7-Apr	1	1.0	0	0.0
	23-Apr	1	0.4	3	1.9
	29-May	36	27.3	1	1.0
	10-Jun	81	61.4	0	0.0
	1-Jul	10	6.0	0	0.0
	26-Mar	0	0.0	0	0.0
Downstream of Shitike Creek	7-Apr	0	0.0	0	0.0
	23-Apr	0	0.0	0	0.0
	29-May	20	15.2	0	0.0
	10-Jun	20	19.7	0	0.0
	1-Jul	2	0.7	0	0.0
	26-Mar	0	0.0	0	0.0
	7-Apr	0	0.0	0	0.0
Morrison's	23-Apr	0	0.0	0	0.0
	29-May	6	5.7	0	0.0
	10-Jun	3	1.7	0	0.0
	1-Jul	0	0.0	0	0.0
	Downstream Total	180	139.3	9	7.2
Dizney	26-Mar	0	0.0	0	0.0
	7-Apr	1	0.3	1	1.0
	23-Apr	0	0.0	2	2.0
	29-May	20	17.6	0	0.0
	10-Jun	37	35.1	0	0.0
	1-Jul	8	5.5	0	0.0
	26-Mar	0	0.0	2	2.0
Upstream of Shitike Creek	7-Apr	0	0.0	2	2.4
	23-Apr	3	2.5	1	0.6
	29-May	2	1.5	3	2.2
	10-Jun	7	6.8	0	0.0
	1-Jul	9	7.2	0	0.0
	26-Mar	0	0.0	1	0.8
	7-Apr	2	0.6	0	0.0
Jason Smith	23-Apr	0	0.0	0	0.0
	29-May	13	9.8	0	0.0
	10-Jun	28	23.6	0	0.0
	1-Jul	12	10.6	0	0.0
Upstream Total		142	120.9	12	11.0



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2014.

Microhabitat data were measured for 10 steelhead redds and 33 single redband trout redds in 2013. Steelhead trout redds were significantly larger than redband trout redds ( $p < 0.05$  t-test). Mean redd depths and velocities were not significantly different ( $p > 0.05$  t-test). The range of depths and velocities observed for trout redds in 2014 was very similar to habitat suitability criteria used by Stillwater Sciences (2015) for mapping potential spawning areas at the six study sites (Table 3), as well as data measured by Zimmerman and Reeves (1999).

**Proportion of Redband and Steelhead Trout Redds Upstream of Shitike Creek**

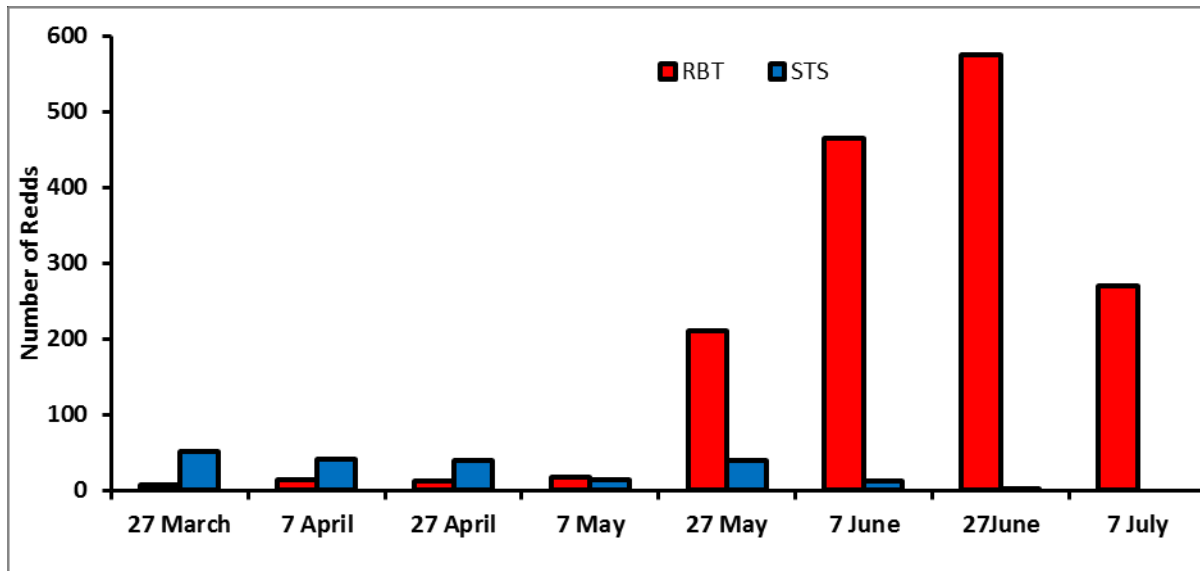
Appendices 1-6 show LEAP basemaps with overlays of mapped 2014 suitable gravel, criteria-based suitable spawning area, redband trout redds, and steelhead trout redds for the Jackson’s, Disney, Jason Smith’s, Mill Island, Morrison’s, and Dry Creek sites, respectively. Proportional

**Pelton Round Butte Project (FERC 2030)  
License Article 433: Lower River Gravel Study  
Biological Monitoring Component  
2008-2014 Salmonid Spawning Surveys Summary Report**



**Prepared by:  
Bob Spatcholts  
On behalf of  
Portland General Electric Company and  
The Confederated Tribes of the Warm Springs Reservation of Oregon**

**September 2015**



**Figure 2.** Number of new redband (RBT) and steelhead (STS) redds counted by survey date for six Deschutes River spawning survey sites, 2008-2014.

**Table 2.** Summary of microhabitat measurements for single redband and steelhead trout redds at six Deschutes River spawning survey sites, 2008- 2014; and criteria used by Stillwater Sciences (2015) for mapping suitable spawning habitat.

Redd Parameters	Stillwater Sciences (2015) Map Criteria	2008-2014 Redd Surveys- Redband trout	2008-2014 Redd Surveys- Steelhead trout
Total # Single Redds Measured	NA	244	131
Mean Redd Length (m)	NA	0.82	1.06
Mean Redd Width (m)	NA	0.64	0.81
Mean Redd Area (m)	NA	0.7	1.2
Mean Redd Depth (m)	>0.3	0.43	0.50
Range Depth (m)	NA	0.2-0.8	0.3-0.9
Mean Velocity (m/s)	0.25-0.90	0.53	0.52
Range Velocity (m/s)	NA	0.2-1.1	0.2-0.9
Spawning gravel median diameter (mm)	16-45		

Chapter 340

Division 41

WATER QUALITY STANDARDS: BENEFICIAL USES, POLICIES, AND CRITERIA FOR OREGON

340-041-0016

Dissolved Oxygen

Dissolved oxygen (DO): No wastes may be discharged and no activities may be conducted that either alone or in combination with other wastes or activities will cause violation of the following standards: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(1) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), the following criteria apply during the applicable spawning through fry emergence periods set forth in the tables and figures and, where resident trout spawning occurs, during the time trout spawning through fry emergence occurs:

(a) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(b) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation;

(c) The spatial median intergravel dissolved oxygen concentration must not fall below 8.0 mg/l.

(2) For water bodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen may not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21);



(3) For water bodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen may not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(4) For water bodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen may not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 5.5 mg/l as a 30-day mean minimum, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(5) For estuarine water, the dissolved oxygen concentrations may not be less than 6.5 mg/l (for coastal water bodies);

(6) For ocean waters, no measurable reduction in dissolved oxygen concentration may be allowed.

[ED. NOTE: To view attachments referenced in rule text, click here for PDF copy.]

Statutory/Other Authority: ORS 468.020, 468B.030, 468B.035 & 468B.048

Statutes/Other Implemented: ORS 468B.030, 468B.035 & 468B.048

History:

DEQ 13-2019, amend filed 05/16/2019, effective 05/16/2019

DEQ 2-2007, f. & cert. ef. 3-15-07

DEQ 17-2003, f. & cert. ef. 12-9-03



**OAR 340-041-0016 - TABLE 21**  
**DISSOLVED OXYGEN & INTERGRAVEL DISSOLVED OXYGEN CRITERIA**  
**(Applicable to All Basins)**

Class	Concentration and Period <sup>1</sup> (All Units are mg/L)				Use/Level of Protection
	30-D	7- D	7- Mi	Min	
Salmonid Spawning		11.0 <sup>2,3</sup>		9.0 <sup>3</sup>	Principal use of salmonid spawning and incubation of embryos until emergence from the gravels. Low risk of impairment to cold-water aquatic life, other native fish and invertebrates.
				8.0 <sup>4</sup>	
Cold Water	8.0 <sup>5</sup>		6.5	6.0	Principally cold-water aquatic life. Salmon, trout, cold-water invertebrates, and other native cold-water species exist throughout all or most of the year. Juvenile anadromous salmonids may rear throughout the year. No measurable risk level for these communities.
Cool Water	6.5		5.0	4.0	Mixed native cool-water aquatic life, such as sculpins, smelt, and lampreys. Waterbodies includes estuaries. Salmonids and other cold-water biota may be present during part or all of the year but do not form a dominant component of the community structure. No measurable risk to cool-water species, slight risk to cold-water species present.
Warm Water	5.5			4.0	Waterbodies whose aquatic life beneficial uses are characterized by introduced, or native, warm-water species.
No Risk	No Change from Background				The only DO criterion that provides no additional risks is “no change from background”. Waterbodies accorded this level of protection include marine waters and waters in Wilderness areas.

**Note:**

*Shaded* values present the absolute minimum criteria, unless the Department believes adequate data exists to apply the multiple criteria and associated periods.

<sup>1</sup> 30-D = 30-day mean minimum as defined in OAR 340-41-006.

7-D = 7-day mean minimum as defined in OAR 340-41-006.

7-Mi = 7-day minimum mean as defined in OAR 340-41-006.

Min = Absolute minimums for surface samples when applying the averaging period, spatial median of IGDO.

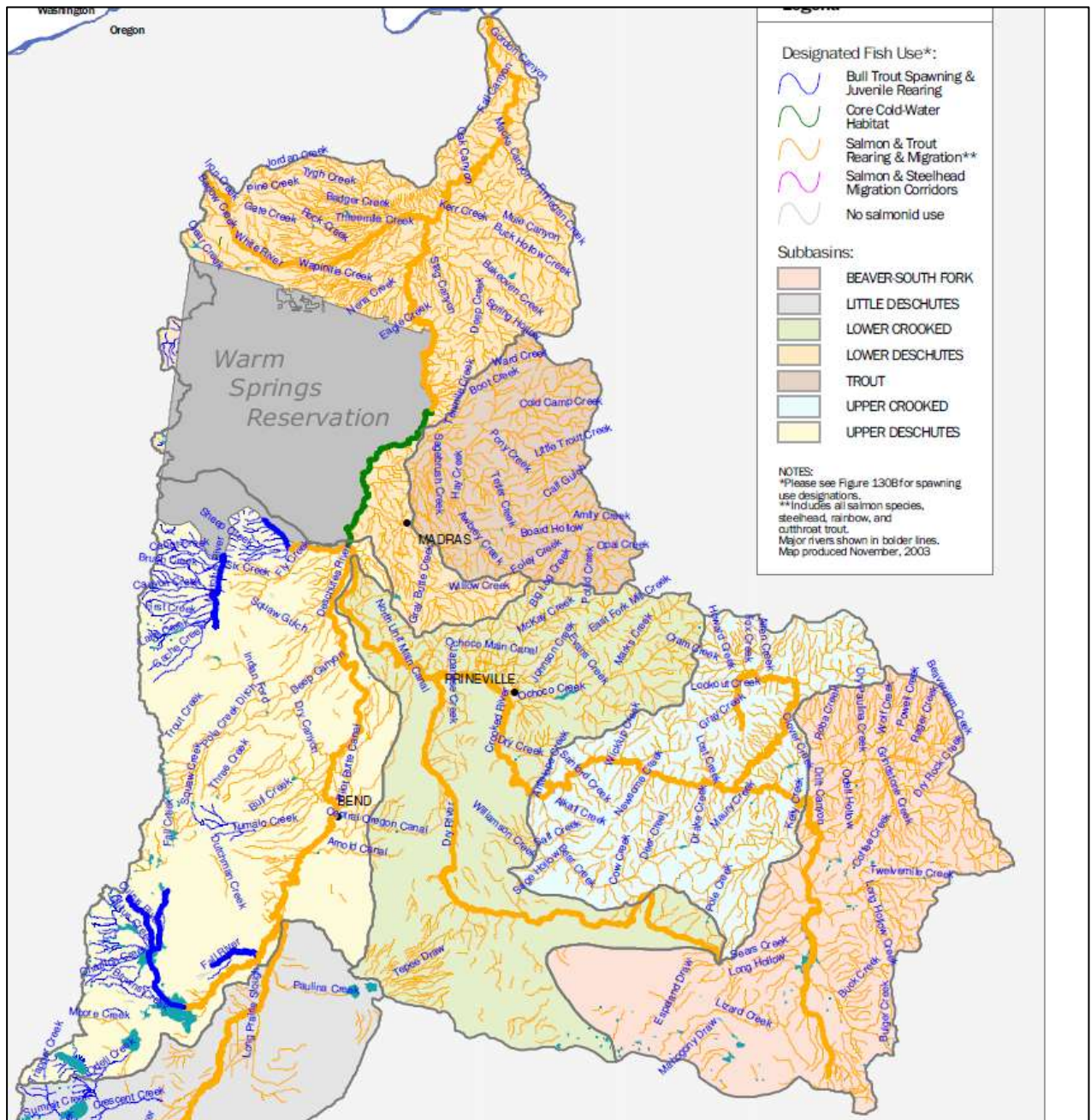
<sup>2</sup> When Intergravel DO levels are 8.0 mg/L or greater, DO levels may be as low as 9.0 mg/L, without triggering a violation.

<sup>3</sup> If conditions of barometric pressure, altitude and temperature preclude achievement of the footnoted criteria, then 95 percent saturation applies.

<sup>4</sup> Intergravel DO criterion, spatial median minimum.

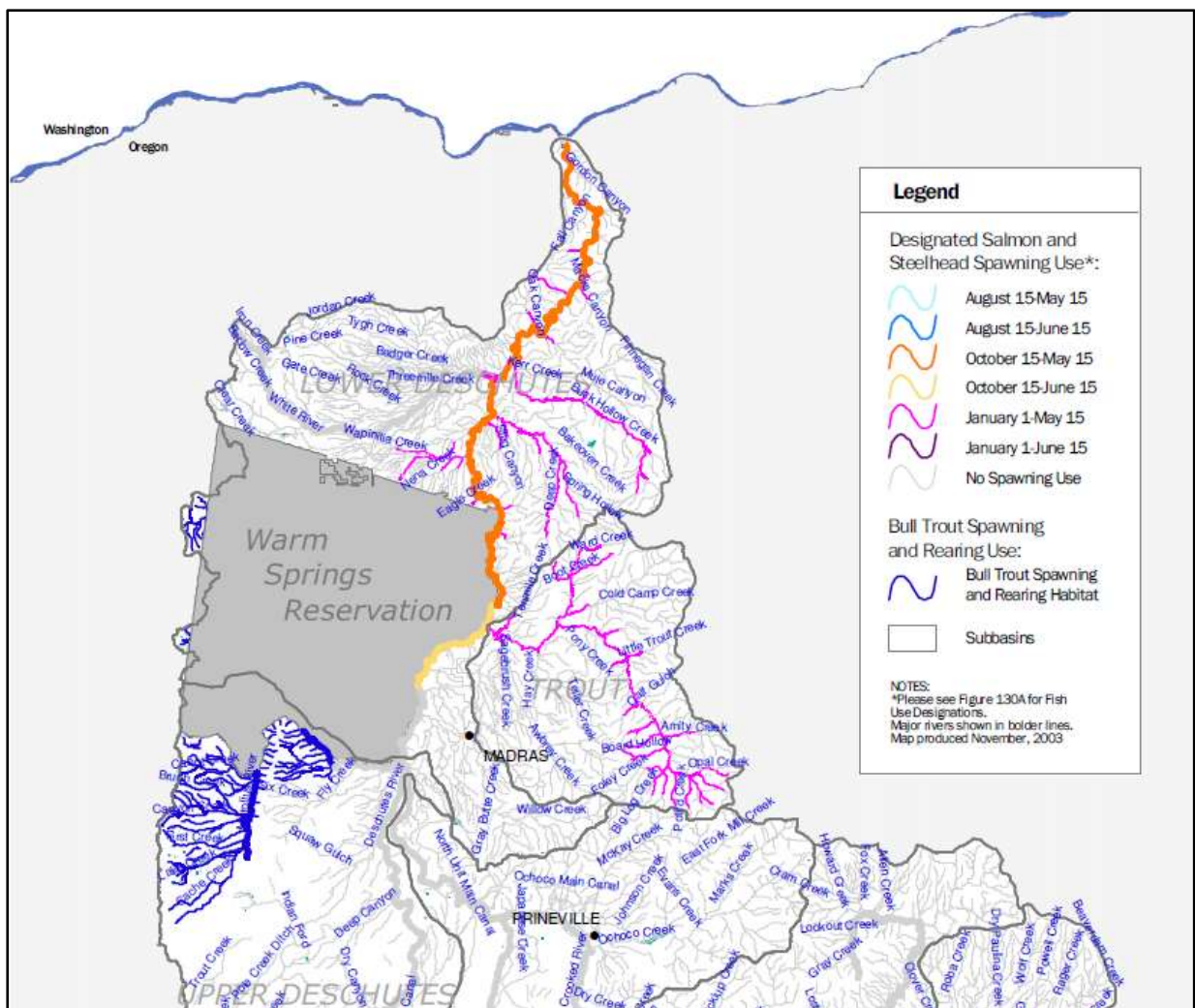
<sup>5</sup> If conditions of barometric pressure, altitude, and temperature preclude achievement of 8.0 mg/L, then 90 percent saturation applies.

**Figure 1: Year-Round Fish Use Designations, Deschutes River**



### Figure 2: Salmon and Steelhead Spawning Use, Deschutes River

Note: the resident trout spawning locations on the Deschutes River (shown in yellow and orange) are the same as the salmon and steelhead spawning locations shown on this map, and the end dates are also the same. The reach upstream (south) of the yellow reach is not spawning habitat (shown in grey) because it is between the Pelton Round Butte system dams.





# Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality

811 SW Sixth Avenue  
Portland, OR 97204-1390  
503-229-5696  
TTY 503-229-6993

February 4, 2004

Mr. Randy Smith, Director  
Office of Water  
U.S. EPA Region 10  
1200 Sixth Avenue  
Seattle, WA 98101

Re: Oregon Responses to EPA Questions re the State's water quality temperature standards

Dear Mr. Smith:

This letter is a follow up to our similar correspondence of December 19, 2003, which described Oregon's newly adopted antidegradation and temperature rules. There are three purposes for this letter. First, we are offering similar clarifications regarding the State's intended methodology for identifying natural conditions for parameters other than temperature. Second, we are commenting on several proposed conservation measures EPA is developing pursuant to consultation under the Endangered Species Act. Finally, we are providing your Agency with information on the application of the dissolved oxygen criteria to resident fish spawning.

## Natural Conditions

As we indicated in our earlier letter, our revised rules make it clear that where DEQ identifies a natural condition which is less stringent than the numeric criteria set out in the State's water quality standards, the natural condition supercedes the numeric criteria. Very similar language appeared in our previous rules, which were previously approved by EPA.

By definition, "natural conditions" are those pollutants that are present in the State's waters that are not attributable to anthropogenic activities. Rather, these conditions are caused by local geophysical, hydrological and meteorological processes and wildlife. DEQ anticipates that site-specific natural conditions might be identified for the following parameters:

- Bacteria (attributed to wildlife)
- Metals (attributed to naturally eroding ore deposits)
- Nutrients (attributed to background soil, vegetation and/or wildlife conditions)
- Sediments and Turbidity (attributed to soil erosion and/or organic matter not accelerated by human activities)

Item A 000229

- Other parameters attributed to similar natural processes.

Prior to a natural condition superceding otherwise applicable numeric criteria, DEQ will make a finding as to the level at which the pollutant is present with no influence from anthropogenic activities. Similarly, DEQ will document the natural process contributing to the presence of the pollutant. The specific methodology used to support a natural condition finding may vary in each local situation. However, in general the methodologies used will be similar to that described in our December 19, 2003 letter:

- Reference streams,
- Pollutant transport models,
- DNA testing,
- Historical data (where available) and/or
- Other sampling methods and studies.

The public will have specific notice of these natural conditions whenever they are relevant to one of the Clean Water Act regulatory programs. The public notices and documentation accompanying the biannual 303(d) listing process, draft TMDLs, draft NPDES permits and 401 water quality certifications will indicate that the otherwise applicable numeric criteria have been superceded by a natural conditions finding. Moreover, since 303(d) listings and TMDLs are transmitted to EPA for approval, the Agency will have an opportunity to review DEQ's natural conditions conclusions. DEQ is committed to work with EPA as natural condition methodologies are refined in the TMDL, NPDES and 303(d) listing contexts.

DEQ expects that natural conditions will most commonly be identified through the TMDL process. In that circumstance, EPA will have an opportunity to review and evaluate any natural condition determination as part of its TMDL approval action. DEQ will list the water bodies where "natural conditions" findings have been made on our standards web page to ensure that the public is aware and notified of natural conditions,

It should be noted that it is possible, at some locations in the State, that the natural condition will not support, and never has supported a designated beneficial use. In such circumstances, DEQ will modify the designated use to properly adjust the beneficial use to better reflect the existing use of the water segment.

#### Proposed Conservation Measures

DEQ is aware that EPA is considering several conservation measures associated with its approval of the State water quality standards revisions. EPA has inquired whether DEQ would participate in these conservation measures if they are pursued. To begin with, DEQ notes that most of these conservation measures pursue information on the future *implementation* of the State's standards. They are best categorized as efforts intended to identify additional information supporting the use of our standards once they are in place.

Since Oregon has a strong interest in these federal initiatives, DEQ will, resources allowing, participate in the proposed conservation measures as described in EPA's Biological Evaluation: Temperature Monitoring and Use Designations (2.5.1) and the Two Year Review (2.5.2).

#### Dissolved Oxygen and Spawning

The revised Oregon rules clarified spawning locations and timing for anadromous fish and Lahontan Cutthroat Trout. Due to a lack of site specific data for species other than these, and since temperature criteria for spawning were not established for other species, no similar clarification was made for resident trout (i.e., rainbow, redband, Westslope cutthroat and coastal cutthroat) or char (bull trout) spawning. However, the dissolved oxygen criteria contain provisions that continue to apply to resident trout and char spawning areas. DEQ will use the following dates to apply the dissolved oxygen spawning criteria (throughout the range where the Oregon maps indicate trout rearing, redband trout and core cold water habitat uses are identified).

#### Resident Trout Spawning (Redband, Rainbow, Westslope and Coastal Cutthroat)

- *For waters designated as trout rearing, or redband trout use, spawning is deemed to occur from January 1 – May 15 each year;*
- *For waters designated as core cold water habitat, or bull trout spawning and rearing use, resident trout spawning is deemed to occur from January 1 – June 15 each year; and*
- *For trout rearing waters upstream from core cold water habitat, spawning is also deemed to occur from January 1 – June 15 each year.*

#### Char (Bull Trout) Spawning

The following dates apply to all reaches designated as having "bull trout spawning and rearing use" within the specified basin or subbasin:

<u>Basin</u>	<u>Subbasin</u>	<u>Spawning Period</u>	<u>Source of Information</u>
South Willamette		Aug 15 – May 30	ODFW
John Day		Sept 1 – April 30	ODFW
Umatilla		Sept 1 – April 30	ODFW

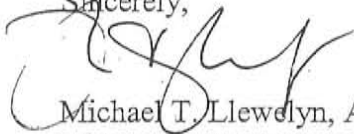
Randy Smith letter  
February 4, 2004

Walla Walla		Sept 1 – April 30	ODFW
Grand Ronde	Upper G. R.	Sept 1 – April 15	ODFW
	Wallowa	Sept 1 – May 15	ODFW
	Wenaha	Aug 15 – March 31	ODFW
Imnaha		Aug 15 – May 31	ODFW
Hood		Aug 15 – May 15	USFWS
Deschutes		Aug 15 – May 15	USFWS
Powder		Aug 15 – May 15	USFWS
Malheur		Aug 15 – May 30	USFWS
Klamath		Aug 15 - May 30	USFWS

This timing information will be circulated to DEQ field staff responsible for implementing the dissolved oxygen criteria. DEQ will continue to refine all of these designations as more information is developed on resident trout and char spawning activities.

Oregon looks forward to EPA's review and approval of our water quality standards. If you require any additional information or clarification of these rules, please contact me or have your staff call Mark Charles, water quality standards manager at (503) 229-5589.

Sincerely,



Michael T. Llewellyn, Administrator  
Water Quality Program

Cc: Stephanie Hallock - DEQ  
Mark Charles - DEQ  
Paula van Haagen - EPA  
Mary Lou Soscia - EPA