

Clean Water Act § 401 Certification Modification
for
PacifiCorp’s Non-Capacity License Amendment for the
North Umpqua Hydroelectric Project
(FERC No. 1927)
Umpqua River Basin
Douglas County, Oregon

The Oregon Department of Environmental Quality issues this § 401 water quality certification modification in response to PacifiCorp’s application, entitled Request to Modify the Water Quality Certification for the North Umpqua Hydroelectric Project to Include Pumped Storage Facilities and Operations (“WQ 401 certification application”), which relates to PacifiCorp’s application to the Federal Energy Regulatory Commission to amend its existing license for the North Umpqua Hydroelectric Project (“Project”, FERC No.1927) (“FERC license amendment application”). As described more fully in the WQ 401 certification application and FERC license amendment application, PacifiCorp seeks authorization to modify the Project’s Toketee and Fish Creek developments to operate as a pumped storage facility (“Pumped Storage Project”). These § 401 Certification Conditions apply to the operation of the Pumped Storage Project and are distinct from the § 401 Certification Conditions issued to PacifiCorp June 28, 2002, pursuant to the Commission’s relicensing of the Project (all terms herein are as defined in Oregon Administrative Rule Chapter 340, Division 041). Upon the Commission’s issuance of an amended license that includes this water quality certification, PacifiCorp must operate the Pumped Storage Project consistent with its proposed operations, including proposed mitigation, set forth in its WQ 401 certification application, subject to the conditions set forth in the 2002 § 401 Certification Conditions, as supplemented by the conditions of this certification.

1. Water Quality Management Plan

Within three months following the Commission’s issuance of an amended license, PacifiCorp must submit to DEQ a Water Quality Management Plan (WQMP). Upon approval by DEQ, PacifiCorp must file the WQMP with FERC and implement the WQMP. The WQMP must include:

a) Monitoring Locations

Water quality monitoring is required at the locations and frequency identified in Exhibit A.¹ The WQMP must identify the name and location of each station, the depth or depths of each monitoring location, and any other characteristics needed to characterize the location of each water quality data recording site.

b) Duration

PacifiCorp must monitor water quality at the locations and frequency identified in Exhibit A as follows:

- i. Pre-construction water quality monitoring is required at all locations from June through September until Pumped Storage Project operation begins.
- ii. Water quality monitoring is required at all locations for three years (i.e., from June through September) once the Pumped Storage Project is placed in operation.
- iii. After the second year of required post-operation monitoring, PacifiCorp may recommend reducing monitoring requirements at certain locations if data support a finding that further monitoring at these locations is not required to evaluate the Pumped Storage Project's effects on water quality. DEQ may review and approve such a recommendation if DEQ finds that further monitoring is not required to evaluate Project-related effects on water quality.
- iv. DEQ may require additional monitoring or adaptive management, or both, after the third year of monitoring, as warranted, to demonstrate support for all recognized beneficial uses.

c) Methodology

The WQMP must describe field methodology including but not limited to:

- i. Data collection protocol, analytical methods, and laboratory method reporting limits,
- ii. Compliance monitoring and field audit schedule,
- iii. Instrument calibration procedures and schedule, and
- iv. Contingency plan for inoperable or malfunctioning equipment.

d) Parameters

Water quality monitoring is required for the following parameters:

- i. At the permanent Soda Springs water quality station collocated with USGS gauge 14316460, PacifiCorp must continue to monitor temperature, dissolved oxygen, specific conductivity, pH, and turbidity.

¹ Exhibit A presents Table 2 from the "Evaluation and Findings Report Section, 401 Water Quality Certification for the North Umpqua License Amendment (FERC Project Number 1927)", updated November 2022.

- ii. PacifiCorp shall monitor water temperature, dissolved oxygen, specific conductance, pH, total dissolved gas pressure, and turbidity as prescribed in the water quality monitoring schedule provided in Exhibit A of this § 401 water quality certification.

e) Adaptive Management

If DEQ finds that operation of the Pumped Storage Project causes a degradation of water quality, DEQ will require PacifiCorp to submit a report that evaluates the cause of the degradation. If Pumped Storage Project-related degradation results in a violation of water quality standards, the report must also propose adaptive management measures to investigate, and based upon such investigation, propose options for modification to facilities or Pumped Storage Project operations to prevent any violation of water quality standards. If DEQ finds the Pumped Storage Project is causing or contributing to an exceedance of applicable criteria, then PacifiCorp must take actions DEQ determines necessary to prevent such exceedances.

f) Reporting

PacifiCorp must report water quality monitoring data to DEQ by December 31 of each year for which monitoring was performed. PacifiCorp shall analyze the effects, if any, of Pumped Storage Project operation on water quality in the report. Following review and approval of the report by DEQ, PacifiCorp shall file the report with FERC.

2. Biological Criteria (OAR 340-041-0011); Protection of Beneficial Uses, Statewide Narrative Criteria (OAR 340-041-0007); Antidegradation (OAR 340-041-0004)

a) Flows and Ramping

PacifiCorp must not operate the modified Pumped Storage Project in a manner that reduces flows in Project reaches below the minimum levels set in Section 5 of the North Umpqua Settlement Agreement dated June 13, 2001 (“Agreement”) or causes ramping in Project reaches to exceed the maximum limits prescribed in Section 6 of the Agreement.

b) Updated Spill Control and Countermeasures Plan

Within six months after issuance of an amended FERC license, PacifiCorp shall complete a review of any new or modified oil storage equipment related to completion of the Pumped Storage Project. PacifiCorp shall review and update the Oil Spill Control and Countermeasure Plan for the Fish Creek Hydroelectric Plant (PacifiCorp, December 2016), as necessary and required by 40 CFR § 112, to reflect added equipment, materials, and sources of potential spills represented by the authorized changes to Project operation due to Pumped Storage Project.

c) Spill Reporting

In the event of a spill or release or threatened spill or release to waters of the state of petroleum or other hazardous substances at or above reportable quantities as specified in state and federal regulations, PacifiCorp must implement spill response procedures, notify Oregon Emergency Response System within 24 hours, and comply with ORS Chapters 466 and 468, as applicable.

d) Adaptive Management

- i. If monitoring data at the locations in the North Umpqua River upstream and downstream of the Fish Creek powerhouse tailrace identify that dissolved oxygen decreases more than 0.1 mg/l or causes temperature at such locations to increase more than 0.3°C above the seven-day average maximum of the colder water ambient temperature, DEQ may require PacifiCorp to assess the situation and submit to DEQ an adaptive management action plan. The plan shall propose modifications or operational strategies to reduce conditions that cause or contribute to water quality degradation. If DEQ finds the Pumped Storage Project is causing or contributing to an exceedance of applicable criteria, then PacifiCorp must take actions DEQ determines necessary to prevent such exceedances.
- ii. In addition, if DEQ determines the Pumped Storage Project causes a water quality violation that presents a risk of serious injury to aquatic species, then DEQ may also require PacifiCorp to assess the situation and submit to DEQ an adaptive management action plan that proposes modifications or operational strategies to address the water quality violation(s) and implement the plan in accordance with DEQ's approval.

3. Temperature (OAR 340-041-0028)

PacifiCorp must take actions to ensure operation of the Pumped Storage Project does not cause the seven-day average maximum temperature (7dAM) in the Slide Creek impoundment measured at a location downstream of the Fish Creek tailrace from increasing by more than 0.3°C relative to baseline, i.e., incoming 7dAM water temperature measured at a location upstream of the Fish Creek tailrace.

a) Water Quality Monitoring

PacifiCorp shall assess the thermal effects of the Pumped Storage Project by measuring temperature at locations upstream and downstream of the Fish Creek tailrace. PacifiCorp shall perform water quality monitoring in accordance with the WQMP developed in accordance with Condition 1 of this certification.

b) Ambient Air Temperature

PacifiCorp must use measurements of ambient air temperatures recorded at the National Weather Service, Medford, Oregon Office for 12 miles WSW of Lemolo Lake, Oregon (Toketee, Oregon (TOFO3)) or next nearest available reporting station to inform whether changes to Pumped Storage Project operations are necessary to prevent any exceedance of the applicable temperature standard.

c) Adaptive Management

When weather forecasts predict extended (i.e., 7 days or more) ambient temperatures at or above the 90th percentile warmest 7-day temperatures, PacifiCorp must implement alternate operating schedules to ensure Pumped Storage Project operations during periods of high thermal stress do not cause or contribute to an exceedance of the applicable temperature standard. These alternative operating schedules may include:

- i. Modifying Pumped Storage Project operations (including but not limited to pumping, storing and generating) when weather forecasts predict extended (i.e., 7 days or more) ambient temperatures at or above the 90th percentile warmest 7-day temperatures
- ii. Other adaptive strategies informed by water quality monitoring or refined water quality modeling, or both.

If DEQ determines monitoring indicates the Pumped Storage Project is causing or contributing to a violation of the temperature criteria, PacifiCorp shall develop and propose measures to address the temperature exceedance as part of an adaptive management plan to ensure that project does not cause or contribute to a violation of the temperature criteria. Following DEQ approval, PacifiCorp shall implement the plan in accordance with DEQ's approval.

If DEQ determines monitoring demonstrates that the Pumped Storage Project does not cause or contribute to a violation of temperature criteria, then DEQ may allow PacifiCorp to cease monitoring for a period of time or for the remaining term of the license.

d) Reporting

PacifiCorp must document in the annual report required by Condition 1 of these § 401 Certification Conditions any temporary alternative operational changes undertaken specifically to limit temperature gain downstream of Pumped Storage Project. The report shall:

- i. Identify the 90th percentile of the warmest seven-day ambient temperature.
- ii. Summarize ambient air temperatures during the reporting period and identify any periods that exceed the 90th percentile of the warmest seven-day ambient temperature.
- iii. Analyze monitoring data to evaluate the effect of Pumped Storage Project operation on temperature in the North Umpqua River.
- iv. Discuss any operational changes undertaken during the reporting period specifically to address the Pumped Storage Project's effect on temperature.
- v. Propose modifications to PacifiCorp's adaptive management strategies, if warranted or requested by DEQ, based on a review of operational monitoring data, revised or refined water quality models, or other relevant new information.

4. Dissolved Oxygen (OAR 340-041-0016)

PacifiCorp must take actions to ensure operation of the Pumped Storage Project does not cause or contribute to a violation of the applicable biologically-based numeric criterion (i.e., cause dissolved oxygen saturation to be less than 8.0 mg/L) as measured at a location downstream of the Fish Creek tailrace.

a) Water Quality Monitoring

PacifiCorp shall assess the effects of the Pumped Storage Project by measuring dissolved oxygen at locations upstream and downstream of the Fish Creek tailrace. PacifiCorp shall perform water quality monitoring in accordance with the WQMP developed in accordance with Condition 1 of this certification.

b) Adaptive Management

PacifiCorp must implement alternative operating schedules when ambient conditions are predicted to cause dissolved oxygen saturation to be less than the 8.0 mg/l criterion. These alternative operating schedules may include:

- i. Increasing air entrainment in turbine discharge.
- ii. Other adaptive strategies informed by water quality monitoring or refined water quality modeling, or both.

If DEQ determines the Pumped Storage Project is causing or contributing to a violation of the applicable dissolved oxygen standard, PacifiCorp must submit to DEQ proposed alternative operating schedules in an adaptive management plan and implement that plan in accordance with DEQ's approval.

c) Reporting

PacifiCorp must document in the annual report required by Condition 1 of these § 401 Certification Conditions any temporary alternative operational changes undertaken specifically to limit dissolved oxygen reductions in the Slide Creek impoundment. The report must:

- i. Analyze monitoring data to evaluate the effect of Pumped Storage Project operations on dissolved oxygen at locations downstream of the Fish Creek powerhouse tailrace.
- ii. Discuss any operational changes undertaken during the reporting period specifically to address the Pumped Storage Project's effect on dissolved oxygen.
- iii. Propose modifications to PacifiCorp's adaptive management strategies, if warranted or requested by DEQ, based on a review of operational monitoring data, revised or refined water quality models, or other relevant new information.

5. Total Dissolved Gas (OAR 340-041-0031)

PacifiCorp must take actions to ensure operation of the Pumped Storage Project does not cause or contribute to the entrainment of atmospheric gas below the Fish Creek tailrace at concentrations that reach or exceed 110 percent of saturation.

a) Water Quality Monitoring

PacifiCorp shall assess the effects of the Pumped Storage Project by measuring total dissolved gas (TDG) at locations upstream and downstream of the Fish Creek tailrace. PacifiCorp shall perform water quality monitoring in accordance with the WQMP developed in accordance with Condition 1 of this certification.

b) Adaptive Management

If DEQ determines monitoring indicates the Pumped Storage Project is causing or contributing to a violation of the applicable TDG water quality standard, PacifiCorp must consult with DEQ on adaptive management strategies to attain the TDG criteria, and after such consultation, PacifiCorp must develop and submit an adaptive management plan identifying such alternative measures. Following DEQ review and approval of the adaptive management plan, PacifiCorp shall implement the plan in accordance with DEQ's approval.

c) Reporting

PacifiCorp must submit an annual report prepared in accordance with Condition 1 of these § 401 Certification Conditions. The report must:

- i. Analyze monitoring data to evaluate the effect of Pumped Storage Project operations on TDG.
- ii. Discuss any operational changes undertaken during the reporting period specifically to address the Pumped Storage Project's effect on TDG.
- iii. Make recommendations regarding changes to future Pumped Storage Project operations, as warranted or requested by DEQ, and as supported by a review of operational monitoring data.

6. pH (OAR 340-041-0021)

PacifiCorp must ensure Pumped Storage Project operations do not cause or contribute to a change in pH values outside the ranges prescribed in the Umpqua basin-specific criteria given in OAR 340-041-0326 at monitoring stations located downstream of the Fish Creek tailrace.

a) Water Quality Monitoring

PacifiCorp must monitor pH at the locations identified in the monitoring schedule provided as Exhibit A of this certification.

b) Adaptive Management

If DEQ determines monitoring indicates the Pumped Storage Project is causing or contributing to a violation of the applicable pH water quality standard, PacifiCorp must consult with DEQ on adaptive management strategies to attain the pH criteria, and after such consultation, PacifiCorp must develop and submit an adaptive management plan identifying such alternative measures. Following DEQ review and approval of the adaptive management plan, PacifiCorp shall implement the plan in accordance with DEQ's approval.

c) Reporting

PacifiCorp must submit an annual report prepared in accordance with Condition 1 of these § 401 Certification Conditions. The report must:

- i. Analyze monitoring data to evaluate the effect of Pumped Storage Project operations on pH.
- ii. Discuss any operational changes undertaken during the reporting period specifically to address the Pumped Storage Project's effect on pH,
- iii. Make recommendations regarding changes to future Pumped Storage Project operations, as warranted or requested by DEQ, and as supported by a review of operational monitoring data.

7. Turbidity (OAR 340-041-0036)

PacifiCorp must take actions, including but not limited to Best Management Practices intended to reduce sedimentation and erosion, to ensure operation of the Pumped Storage Project does not cause or contribute to more than a ten percent cumulative increase in natural stream turbidities, as measured at a monitoring point downstream of the Fish Creek tailrace relative to measurements at the location immediately upstream of the Fish Creek powerhouse tailrace , excepting limited duration activities set forth in OAR 340-041-0036.

a) Water Quality Monitoring

PacifiCorp shall assess the effects of the Pumped Storage Project by measuring turbidity in accordance with the WQMP developed in accordance with Condition 1 of this certification. Monitoring is required at the Fish Creek forebay outlet, the Fish Creek tailrace, and the Slide Creek impoundment downstream of the Fish Creek tailrace.

b) Adaptive Management

If DEQ determines that monitoring indicates the Pumped Storage Project is causing or contributing to a violation of the turbidity water quality standard, PacifiCorp must consult with DEQ on adaptive management strategies to attain the turbidity criteria, and after such consultation, PacifiCorp must develop and submit an adaptive management plan identifying such alternative measures. Following DEQ review and approval of the adaptive management plan, PacifiCorp shall implement the plan in accordance with DEQ's approval.

c) Reporting

PacifiCorp must submit an annual report prepared in accordance with Condition 1 of these § 401 Certification Conditions. The report must:

- i. Analyze monitoring data to evaluate the effect of Pumped Storage Project operation on turbidity.
- ii. Discuss any operational changes undertaken during the reporting period specifically to address the Pumped Storage Project's effect on sedimentation and turbidity.
- iii. Make recommendations regarding changes to future Pumped Storage Project operations, as warranted or requested by DEQ, and as supported by a review of operational monitoring data.

8. General Conditions

- a) **Implementation:** PacifiCorp must apply for and receive all necessary permits and authorizations including coverage under National Pollution Discharge Elimination System (NPDES) 1200-C construction stormwater permit, if required, before Pumped Storage Project construction activities commence.
- b) **Certification Modification:** Without limiting DEQ's discretion to take other actions in accordance with 33 USC § 1341, DEQ may modify the Certification to add, delete, or modify Certification conditions as authorized by OAR 340-048-0050.

- c) Project Changes. PacifiCorp shall notify DEQ of any change in ownership, scope, or operation of the Project, including the Pumped Storage Project. PacifiCorp shall obtain DEQ's review and approval before undertaking any such change, including but not limited to changes to Pumped Storage Project structures, construction, operations, and flows, which, among other changes, may potentially affect water quality.
- d) Project Repair or Maintenance. PacifiCorp shall obtain DEQ's review and approval before undertaking Pumped Storage Project repair or maintenance activities that may potentially affect water quality (other than repair or maintenance activities authorized by the amended FERC license). DEQ may, at PacifiCorp's request, approve specified repair and maintenance activities on a periodic or ongoing basis.
- e) Project Inspection. PacifiCorp shall allow DEQ such access as necessary to inspect the Pumped Storage Project area and records required by this Certification at reasonable times as necessary to monitor compliance with § 401 Certification conditions.
- f) Posting of § 401 Certification. PacifiCorp shall post a copy of these Certification conditions in a prominent location at PacifiCorp's Project office.
- g) 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.
- h) Conflict Between Certification Conditions and Application. To the extent that there are any conflicts between the terms and conditions in this Certification and how activities, obligations, and processes are described in the Application, the terms and conditions in this Certification, as interpreted by DEQ, shall control.

9. Project Specific Fees

In accordance with ORS 543.080, PacifiCorp shall pay project-specific fees, in 2022 dollars adjusted according to the formula in Condition 9b below, to DEQ for costs of overseeing implementation of this Certification.

- a) Oregon Department of Environmental Quality

PacifiCorp shall pay project-specific fees to DEQ, made payable to State of Oregon, Department of Environmental Quality, according to the following schedule:

FERC License	Annual Project-Specific Fee Subject to Adjustment	Due
Upon License Amendment	\$ 3,500 prorated to June 30	Within 30 days
Years 1 - 3	\$ 3,500	July 1

- b) Annual Adjustment

Fee amounts shall be adjusted annually, according to the following formula:

$$AD = D \times (CPI-U)/(CPI-U-June 2022)$$

Where:

AD = Adjusted dollar amount payable to agency.

D = Dollar amount pursuant to Condition 9a above.

CPI-U = the most current published version of the Consumer Price Index-Urban. The CPI-U is published monthly by the Bureau of Labor Statistics of the U.S. Department of Labor. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted by written agreement between DEQ and PacifiCorp.

c) Payment Schedule

PacifiCorp shall pay fees pursuant to a written invoice from DEQ. Except as provided below, project-specific fees are due on July 1 of each year following issuance of the new FERC License. PacifiCorp shall pay an initial prorated payment to DEQ within 30 calendar days of issuance of the amended FERC license, for the period from the date of license issuance to the first June 30 which follows license amendment issuance.

d) Credits

DEQ will credit against this amount any fee or other compensation paid or payable to DEQ directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for DEQ's costs of oversight.

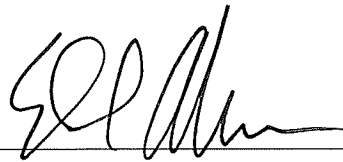
e) Expenditure Summary

Upon request, DEQ shall, on a biennial basis, provide PacifiCorp with a summary of Pumped Storage Project-specific expenditures.

f) Duration

The DEQ fee will expire 3 years after the first July 1 following the issuance of the amended FERC license, unless DEQ terminates it earlier because DEQ determines oversight is no longer necessary. One year before the expiration of the fee, or earlier if mutually agreed, DEQ and PacifiCorp shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. PacifiCorp shall pay any project-specific fee required after such review as provided in ORS 543.080.

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY



Keith Andersen
Western Region Administrator

December 13, 2022

Date

Exhibit A: Water Quality Monitoring Schedule (from Table 2 of Evaluations and Findings Document)

Location	Purpose	Depth	Parameters	Frequency
Toketee Reservoir outlet	WQ monitoring	3 meters	Group A	Hourly
	Audit	1-meter increments	Group A	Bi-weekly
	WQ modeling	Surface, 3 m, 6 m	Temperature	Hourly
Toketee Powerhouse	WQ monitoring	Near bottom	Group A	Hourly
	Audit	Near bottom	Group A	Bi-weekly
	WQ modeling	Near bottom	Temperature	Hourly
Toketee Bypass Reach	WQ monitoring	Near bottom	Group A	Bi-weekly
	WQ modeling	Near bottom	Temperature	Hourly
Slide Creek upstream of Fish Creek tailrace	WQ monitoring	Near bottom	Group A	Bi-weekly
	WQ modeling	Near bottom	Temperature	Hourly
Fish Creek Forebay Inlet	WQ monitoring	Near bottom	Group A	Bi-weekly
	WQ modeling	Near bottom	Temperature	Hourly
Fish Creek Forebay Outlet	WQ monitoring	1-meter increments	Group B	Bi-weekly
	WQ modeling	Surface, 3 m, 6 m	Temperature	Hourly
Fish Creek Powerhouse tailrace	WQ monitoring	Near bottom	Group B	Bi-weekly
	WQ modeling	Near bottom	Temperature	Hourly
Slide Creek impoundment downstream of Fish Creek tailrace	WQ monitoring	Near bottom	Group B	Hourly
	Audit	Near bottom	Group B	Bi-weekly
	WQ modeling	Surface, near bottom	Temperature	Hourly
Slide Creek Bypass Reach	Monitoring & modeling	Near bottom	Group A	Hourly
	Audit	Near bottom	Group A	Bi-weekly
Slide Creek Full Flow Reach	Monitoring & modeling	Near bottom	Group A	Hourly
	Audit	Near bottom	Group A	Bi-weekly
Soda Springs	WQ monitoring	Near bottom	Group C	30-minutes

Group A parameters: water temperature, dissolved oxygen, specific conductance, pH, and total dissolved gas pressure.

Group B parameters: Group A parameters and turbidity.

Group C parameters: Temperature, dissolved oxygen, specific conductivity, pH, turbidity