



State of Oregon  
Department of  
Environmental  
Quality

**Clean Water Act § 401 Certification Conditions**  
**For the**  
**City of Portland's Bull Run Reservoir Hydroelectric Project**  
**(FERC No.2821)**  
**Sandy River Basin**  
**Clackamas County, Oregon**

Upon Federal Energy Regulatory Commission (FERC) issuance of an amended license for the City of Portland's Bull Run Reservoir Hydroelectric Project (Project), the City of Portland (the City) shall comply with the following § 401 Certification Conditions:

**1. Water Quality Monitoring**

Under the Habitat Conservation Plan, the City monitors water temperature at Larson's Bridge in the Lower Bull Run River, using USGS gage 14140020. The City of Portland currently implements a monitoring program that includes, when conditions are safe to do so, bi-weekly collection of temperature and dissolved oxygen profiles at the deepest point in Bull Run Reservoir #2 and monthly sampling of nitrates, nitrites, total nitrogen, reactive phosphorus and total phosphorus at the deepest point in the Reservoir.

**2. Dissolved Oxygen (DO)**

*a. DO in the lower Bull Run River downstream of Bull Run Reservoir #2.*

(1) To ensure that dissolved oxygen is sufficiently high in water released from Bull Run Reservoir to the Bull Run River, the City of Portland must ensure that any physical changes between Bull Run Reservoir #2 and the downstream confluence of the headgate canal and spillway, along either the headgate canal or in the spillway, will provide a similar or greater level of turbulence or treatment to the water such that water released from the Reservoir regains 95% saturation or better as water enters the lower Bull Run River from October 15 through June 15, and at least 90% saturation between June 16 and October 14. Furthermore, between August 15 and October 14, water released from the Bull Run Reservoir #2 must not contribute to dissolved oxygen concentrations of less than 95% in the most downstream reach of the Bull Run River where anadromous spawning occurs as early as August 15.

*b. DO in Bull Run Reservoir #2:*

(1) The City shall continue to collect bi-weekly dissolved oxygen profiles at the deepest point in Bull Run Reservoir #2 as described above in section 1. The purpose of this data collection will be to determine whether operation of the multi-port withdrawal structure contributes to changes in DO concentrations within Bull Run Reservoir #2, so for the purpose and reporting for this § 401 Certification, monitoring will begin the same month that the completed tower is put into use. This monitoring program may be modified as needed after submitting a revised Monitoring Plan to and receiving approval from Oregon DEQ. For the purpose of this § 401 Certification, this requirement for monitoring shall expire after five consecutive years of successfully operating the water intake towers and meeting downstream temperature targets, with no significant water quality impact in Reservoir # 2.

(2) The City will record and submit these data to DEQ annually concurrent with the annual TMDL Implementation Report (this report is currently integrated with the annual Habitat Conservation Plan reporting requirements). The report will include a summary of the data collected that includes the range of values observed, and makes notes any other conditions that may affect DO. When dissolved oxygen concentrations of less than 6 mg DO/L are observed, the City will report the incidences to

DEQ within two weeks.

(3) If DEQ, in consultation with the City, determines that monitoring shows that operation of the multi-port withdrawal structure is causing impacts to DO in the Reservoir, the City shall consult with DEQ to evaluate whether any modifications to the multi-port withdrawal structure operations or whether other changes can be made to project facilities or operations that will reverse the identified impacts to DO. If DEQ determines that such modifications can reverse the identified impacts, the City shall propose modifications to DEQ and, upon DEQ approval, shall implement the modifications.

### **3. Hydrogen Ion Concentration (pH)**

#### *a. Hydrogen ion concentration in Bull Run Reservoir #2:*

(1) The City shall continue to collect bi-weekly pH profiles at the deepest point in Bull Run Reservoir #2. The purpose of this data collection will be to determine whether operation of the multi-port withdrawal structure contributes to changes in pH within Bull Run Reservoir #2, so for the purpose and reporting for this § 401 Certification, monitoring will begin the same month that the completed tower is put into use. This monitoring program may be modified as needed after submitting a revised Monitoring Plan to and receiving approval from Oregon DEQ. Such changes to the plan may be triggered by the desire to better characterize reservoir conditions, mutual agreement between the City and DEQ to terminate the project, or other monitoring needs. For the purpose of this § 401 Certification, this requirement for monitoring shall expire after five consecutive years of successfully operating the water intake towers and meeting downstream temperature targets, with no significant water quality impact in Reservoir # 2.

(2) The City will record and submit these data to DEQ annually concurrent with the annual TMDL Implementation Report (this report is currently integrated with the annual Habitat Conservation Plan reporting requirements). The report will include a summary of the data collected that includes the range of values observed, and identifies any other conditions that may affect hydrogen ion concentration. When pH values that are less than a pH of 6.5 or greater than a pH of 8.5 are observed, the City will report the incidences to DEQ within two weeks.

(3) If DEQ, in consultation with the City, determines that monitoring shows that operation of the multi-port withdrawal structure is causing changes to hydrogen ion concentrations, the City shall consult with DEQ to evaluate whether any modifications to the multi-port withdrawal structure operations or whether other changes can be made to project facilities or operations that will reverse the identified impacts to hydrogen ion concentration. If DEQ determines that such modifications can reverse the identified impacts, the City shall propose modifications to DEQ and, upon DEQ approval, shall implement the modifications.

### **4. Nuisance Algae; Taste, Odor and Toxic Algae Formation;**

#### *a. Nutrient concentrations in Bull Run Reservoir #2:*

(1) The City shall continue to collect monthly water samples at the deepest point in Bull Run Reservoir #2 and analyze them for reactive phosphorus, total phosphorus, nitrate, nitrite, and total nitrogen content. The purpose of this data collection will be to determine whether operation of the multi-port withdrawal structure contributes to the formation of nuisance or toxic algal blooms within Bull Run Reservoir #2, so for the purpose and reporting for this § 401 Certification, monitoring will begin the same month that the completed tower is put into use. This monitoring program may be modified as needed after submitting a revised Monitoring Plan to and receiving approval from Oregon DEQ. For the purpose of this § 401 Certification, this requirement for monitoring shall expire after five consecutive years of successfully operating the water intake towers and meeting downstream temperature targets, with no significant water quality impact in Reservoir # 2.

(2) The City will record and submit these data to DEQ annually concurrent with the annual TMDL

Implementation Report (this report is currently integrated with the annual Habitat Conservation Plan reporting requirements). The report will include a summary of the data collected that includes the range of values observed, and identifies any other conditions that may affect reservoir nutrient concentrations. The City will also screen these data as they are collected to determine whether any of the four nutrient concentrations show increasing trends or otherwise exhibit predictable increased concentrations. If nutrient concentrations that may trigger algal blooms increase markedly, the City will report the increases to DEQ within two weeks of receiving validated data from the laboratory.

(3) If DEQ, in consultation with the City, determines that monitoring shows that operation of the multi-port withdrawal structure is causing impacts or creates conditions that may jeopardize future water quality, the City shall consult with DEQ to evaluate whether any modifications to the multi-port withdrawal structure operations, whether other changes can be made to project facilities or operations that will reverse the identified impacts to water quality, or whether additional monitoring is warranted to identify water quality impairments. If DEQ determines that such modifications can reverse the identified impacts, the City shall propose modifications to DEQ and, upon DEQ approval, shall implement the modifications. If DEQ and the City concur that additional monitoring of water quality parameters or recording operational conditions is warranted to detect changes in water quality, the City will conduct the additional monitoring.

## 5. Temperature

### a. *At Larson's Bridge in the Lower Bull Run River, downstream of Bull Run Reservoir #2.*

(1) The City will construct and operate the multi-port withdrawal structure on the North Tower water withdrawal structure in Bull Run Reservoir #2, and will optimize water withdrawal to meet the water temperature objectives set out in the Habitat Conservation Plan.

(2) The City will continue to monitor stream temperatures as described in the Habitat Conservation Plan at the Larson's Bridge site at river mile 3.8 on the lower Bull Run River. This monitoring program may be modified as needed after submitting a revised TMDL Implementation Plan to and receiving approval from Oregon DEQ.

(3) The City will continue to record and submit these data to DEQ as described in the Habitat Conservation Plan, which also serves as the City's TMDL Implementation Plan.

(4) If DEQ, in consultation with the City, determines that operation of the multi-port withdrawal structure fails to meet the temperature targets set out in the Habitat Conservation Plan, the City shall consult with DEQ to evaluate whether any modifications to the multi-port withdrawal structure operations or whether other changes can be made to project facilities or operations that will enable compliance with the water temperature targets. If DEQ determines that such modifications will allow compliance with the temperature targets, the City shall propose modifications to DEQ and, upon DEQ approval, shall implement the modifications.

### b. *Bull Run Reservoir #2:*

(1) The City shall continue to collect bi-weekly thermal profiles at the deepest location in Bull Run Reservoir #2. The purpose of this data collection will be to provide information on how operation of the multi-port withdrawal structure affects stratification and in turn other water quality parameters in Bull Run Reservoir #2, so for the purpose and reporting for this § 401 Certification, monitoring will begin the same month that the completed tower is put into use. For the purpose of this § 401 Certification, this requirement for monitoring shall expire after five consecutive years of successfully operating the water intake towers and meeting downstream temperature targets, with no significant water quality impact in Reservoir # 2.

(2) The City will record and submit these data to DEQ annually concurrent with the annual TMDL Implementation Report (this report is currently integrated with the annual Habitat Conservation Plan reporting requirements). The report will include graphs of the thermal profiles of the data collected.

These data will be used to understand reservoir conditions and to interpret whether changes in stratification have occurred due to the multi-port withdrawal structure which in turn may contribute changes in dissolved oxygen or nutrient concentration within the reservoir.

## **6. Turbidity**

During ground-disturbing activities or instream work, the City shall implement Best Management Practices to protect surface water and beneficial uses from adverse Project-related water quality impacts (including but not limited to preventing excessive sediment and turbidity), shall comply with state and federal permitting requirements, and shall comply with state and federal emergency notification requirements.

## **7. General**

### *a. Schedules*

Actions required of the City under these § 401 Certification Conditions, including but not limited to adaptive management evaluations and modifications, shall be performed in accordance with such reasonable schedules as specified in writing by DEQ for the action.

### *b. TMDL*

Nothing in this § 401 Certification affects DEQ's authority to require the City to perform measures, in addition to those specified in this § 401 Certification, necessary to attain the Project's load allocation for temperature downstream of Bull Run Reservoir # 2.

### *c. Certification Modification*

DEQ, in accordance with OAR Chapter 340 Division 48 and, as applicable, 33 USC 1341, may reconsider this Certification and add, delete, or modify certification conditions as necessary to address: (1) 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; (2) TMDLs; (3) changes in water quality standards; (4) any failure of Certification conditions to protect water quality or designated beneficial uses as expected when the Certification was issued; or (5) any change in the Project or its operations that was not contemplated by the Certification that might adversely affect water quality or designated beneficial uses.

### *d. Other Federal Permits*

Upon applying for any federal permit for construction activities at the Project that might disturb river sediments, the City shall provide DEQ written notice of such application and of any proposed changes to or new specifications for the construction activities since issuance of this Certification. DEQ will notify the City and the federal agency either that: (1) this Certification is sufficient for purposes of the federal permit; or (2) in light of new information related to the water quality impacts of the construction activities, there is no longer reasonable assurance of compliance with state water quality standards. In the latter event, DEQ will consider the new information, solicit and consider public and agency comment as required by law, and issue a § 401 certification determination for purposes of the federal permit activities.

### *e. Project Changes*

The City shall obtain DEQ review and approval before undertaking any change to the Project that might significantly affect water quality, including changes to Project structures, operations, and flows.

*f. Project Repair or Maintenance*

The City shall obtain DEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality. DEQ may, at the City's request, provide such prior approval effective prospectively for specified repair and maintenance activities.

*g. Project Inspection*

Upon reasonable notice from DEQ, and subject to DEQ personnel following reasonable safety and security procedures when on the project, the City shall allow DEQ 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 these Certification Conditions.

*h. Posting of § 401 Certification*

The City shall post a copy of these Certification Conditions in a prominent location at the Bull Run Powerhouse Control Center.

*i. Circumstances Beyond the City's Control.*

If any event occurs that is beyond the City's reasonable control and that causes or may cause a delay or deviation in compliance with these Certification Conditions, the City shall immediately notify DEQ 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 City proposes to carry out such measures. It is the City's responsibility in the written notification to demonstrate to DEQ's satisfaction that the delay or deviation has been or will be caused by circumstances beyond the control and despite due diligence of the City. If the City so demonstrates, DEQ may extend times of performance of related activities under this condition, as appropriate. Circumstances or events beyond the City's control include, but are not limited to, acts of nature, unforeseen strikes, work stoppages, fires, explosion, riot, sabotage, or war. DEQ may also consider other circumstances or events as beyond the City's control. These other circumstances 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 DEQ agrees the City 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 City. Increased cost of performance or consultant's failure to provide timely reports may not be considered circumstances beyond the City's control.

*j. Project Specific Fees.*

In accordance with ORS 543.080, the City shall pay project-specific fees for DEQ's cost of overseeing implementation of these Certification Conditions.

(1) The fees for DEQ shall be \$2800.00 annually (2012 dollars adjusted according to the formula in (7) below), made payable to "State of Oregon, Department of Environmental Quality.

(2) Fees shall be paid pursuant to a written invoice from DEQ. Except as provided below, fees shall be due on January 1 of each year after the modified north tower is in operation.

(3) DEQ shall credit against these amounts any fee or other compensation paid or payable to DEQ, directly or through other agencies of the State of Oregon, during the preceding year (January 1 to December 31) for DEQ's cost of oversight.

The DEQ fee shall expire on December 31 of the year that the water quality monitoring in Bull Run

Reservoir # 2 (see Conditions 2, 3, 4 and 5 of this § 401 Certification) is no longer required. This fee may be terminated earlier by DEQ because oversight is no longer necessary. In the month of February following three consecutive summer seasons with successful operation of the intake towers to control downstream temperature, DEQ and the City shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. The City shall continue to pay any project-specific fee required after such review.

(4) The fee amounts set forth above shall be adjusted under the following formula, which shall be applied annually:

Fee Inflation Adjustment Equation:

$$AD = D \times (CPI-U)/(CPI-U\text{-June } 2009)$$

Where:

AD = Adjusted dollar amount payable to agency

D = Dollar amount pursuant to subsection j(1) and j(2), 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 upon written agreement between the agency and the City.

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**

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Nina De Concini, Administrator  
Northwest Region

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Date