



Nick Fish, Commissioner  
Michael Stuhr, P.E., Administrator

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October 9, 2017

David Emme, Manager  
Oregon Health Authority - Drinking Water Services  
800 NE Oregon Street, Suite 640  
Portland, OR 97232-2162

Dear Mr. Emme:

As you requested in your letter of August 1, 2017, this letter presents the Portland Water Bureau's (PWB) proposed compliance schedule and interim control measures to further reduce risk of public exposure to *Cryptosporidium*.

On August 2, 2017, the Portland City Council unanimously voted to pursue filtration as the City's treatment method for *Cryptosporidium*.

PWB will be proceeding with planning, design and construction of a new filtration plant to comply with the 2-log *Cryptosporidium* treatment requirement. A proposed schedule for completion of the work is shown below. The schedule assumes an Oregon Health Authority (OHA) approval date of November 22, 2017 and would proceed as follows:

Planning Start	November 2017
Pilot Study and Planning Complete	November 2020
Design Start	December 2020
Submit plans and specifications to OHA for review and approval	October 2022
Design Completed	December 2022
Begin Construction	April 2023
Start-up and Commissioning Begins	June 2027
<b>Compliance Achieved</b>	<b>September 2027</b>
Complete construction	February 2028

Until compliance is achieved, PWB intends to reduce the risk of the public's exposure to *Cryptosporidium* by sampling and testing for *Cryptosporidium* at the intake and by having in place the interim control measures as outlined below.

## I. Proposed Sampling Schedule for *Cryptosporidium* at the Bull Run Raw Water Intake

PWB proposes the following sampling schedule for *Cryptosporidium* at the intake until adequate treatment is in place.

1. PWB will have all samples analyzed by a laboratory that is accredited to analyze *Cryptosporidium* in water in accordance with applicable Oregon Administrative Rules. PWB will use the EPA-approved Method 1622, 1623, 1623.1, or another EPA-approved method that applies at the time samples are taken. The laboratory PWB uses will run matrix spike recoveries at least monthly.
2. Routine Monitoring
  - a) PWB will conduct routine monitoring for *Cryptosporidium*, consisting of sampling at least 100 liters over at least two days each week, when Bull Run water is being delivered to customers. A week will be considered Sunday through Saturday.
  - b) If routine monitoring is suspended due to a Bull Run shutdown, PWB will notify OHA prior to resuming Bull Run operations.
3. Increased Monitoring

If the presence of *Cryptosporidium* is detected in any sample during routine monitoring, PWB will increase its frequency of monitoring, unless directed otherwise by OHA.

  - a) PWB will begin increased monitoring no later than the week following the day the positive sample is reported to PWB.
  - b) At a minimum, PWB will sample 200 liters per week over four days. A week will be considered Sunday through Saturday.
  - c) Increased monitoring will continue for a minimum of two weeks with no *Cryptosporidium* detections following an initial *Cryptosporidium* detection or as directed by OHA. PWB will consult with OHA to determine the appropriate timing for resuming routine monitoring.
  - d) If increased monitoring is suspended due to a Bull Run shutdown, PWB will notify OHA prior to resuming Bull Run operations.
4. For any sample in which the presence of *Cryptosporidium* is detected, PWB will make efforts to have the sample genotyped, if feasible.
5. Missed or Invalidated Samples

PWB will collect and analyze the specified sample volume over the number of days specified in sections I.2(a) and I.3(b) within the seven-day weekly period unless one of the following conditions applies:

- a) An extreme condition or situation exists that may pose danger to the sample collector or that cannot be avoided and that prevents PWB from sampling in the weekly seven-day period. In this case, PWB will sample as close to the scheduled week as possible. PWB will submit an explanation for the delayed sample to OHA concurrent with the submittal of the sample to the laboratory; or

- b) PWB is unable to report a valid analytical result for the scheduled sampling week due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method requirements (including the quality control requirements), or the failure of an accredited laboratory to analyze the sample. In this case PWB will collect a replacement sample as close to the scheduled week as possible after receiving information that an analytical result cannot be reported for the scheduled week. PWB will submit an explanation for the replacement sample to OHA concurrent with the submittal of the replacement sample to the laboratory.

6. Reporting

PWB will submit the following information to OHA no later than 10 days after the end of the first month following the month when the intake samples are collected: sample collection date, sample type (field or matrix spike), sample volume filtered in liters, analysis method used, the number of oocysts counted, and a summary of this information for the reporting month.

## II. Proposed Interim Control Measures for LT2 Source Water Treatment Compliance

PWB proposes the following measures to reduce the risk of the public's exposure to *Cryptosporidium* until such a time as treatment is in place. These measures are at least as protective as the applicable conditions in the OHA 2012 Variance Order.

1. Watershed Protection

PWB will:

- a) Ensure that all City of Portland legal and operational protections for the Bull Run Watershed Management Unit are maintained at current levels or strengthened.
- b) Monitor known trespass points on a routine basis, and make all reasonable efforts to eliminate potential unauthorized entry.
- c) Ensure that any human sewage within the Bull Run watershed is contained within portable toilets or permanent sanitary facilities. Where possible portable toilets or sanitary facilities will be kept at least 200 feet from any stream, lake, or reservoir within the watershed, except when being transported for disposal outside the watershed. Any portable toilet that cannot be physically located more than 200 feet from a stream, lake, or reservoir will have secondary containment to prevent the release of waste. PWB will ensure that pump-outs and transport of portable toilets are performed with extreme caution to prevent spills and releases.
- d) Propose a plan to OHA within 30 days of receiving a signed interim measures agreement for conducting field inspections and water and scat sampling within the Bull Run Watershed. Implementation of the plan will begin upon approval of the plan by OHA. The plan will include:
  - i. Objectives, methodology, rationale for selected approach, sample collection, analytical methods and quality control specifications.

- ii. Field inspections of priority areas in the watershed including the boundary, the fence around the diversion pool, suspected locations of illicit activities or human entry/camping, high risk soil erosion areas, sanitary facilities, or other areas as identified by PWB. Inspection frequencies will be described in the Watershed Plan and will vary by inspection type, but will occur at least annually. Observations to be noted during the inspections will include the visual presence of debris or water contamination, trash, human wastes, high concentrations of wildlife scat or other unusual signs of wildlife, evidence of fire or landslides, and any evidence of domesticated animal wastes. Any suspicious activity or potential *Cryptosporidium* source, excluding wildlife, will be fully investigated and re-inspected as necessary.
- iii. Semi-annual environmental sampling in priority locations. At a minimum, this will include sampling wildlife scat in high risk areas, and sampling water in major tributaries to the Bull Run Reservoirs.

## 2. Reporting and Notification

PWB will:

- a) Maintain a system for documenting the watershed inspections, monitoring, and investigation results in accordance with the plan approved by OHA under paragraph II.1(d) of this proposal. All results will be reported to OHA on an annual basis in a Bull Run LT2 Interim Control Measures Watershed Report that also includes maps of inspection and sampling locations. OHA will work with PWB to identify any actions necessary to address outstanding issues.
- b) Notify OHA within 24 hours of any laboratory results from water samples collected either in the watershed or at the intake that include any *Cryptosporidium* detections. For *Cryptosporidium* detections in wildlife scat, PWB will notify OHA monthly.
- c) Send a press release to Portland-metro media outlets and post information on its website if *Cryptosporidium* is detected at the raw water intake.
- d) Post information on its website, including the Order Revoking the Variance, explaining that it does not currently treat for *Cryptosporidium* because it is operating under a compliance agreement for *Cryptosporidium* treatment.
- e) Timely notify OHA of any circumstances that may impact the risk of the public's exposure to *Cryptosporidium*, including but not limited to land management decisions, environmental events, or structural changes within or on land immediately adjacent to the water supply drainage boundary, within a three-mile buffer of the water supply drainage boundary, or within or on land immediately adjacent to the Bull Run Watershed Management Unit boundary. OHA will work with PWB to identify any actions necessary to address any *Cryptosporidium*-related issues.

## 3. Access to Watershed: Information

PWB will allow OHA or its designee, upon request, access to the watershed, laboratory results and pertinent documents, in order to assess compliance with this agreement or for special studies.

Thank you for considering our proposed compliance schedule for a filtration plant, monitoring schedule for *Cryptosporidium* at the raw water intake and interim control measures. We look forward to entering into a compliance agreement with OHA to ensure compliance with the 2-log treatment requirements of LT2 while protecting public health and reducing the risk of the public's exposure to *Cryptosporidium* until treatment is in place.

Sincerely,



Michael Stuhr, P.E., Administrator  
Portland Water Bureau

CC: Kari Salis, PE, OHA – Drinking Water Services  
Nick Fish, City of Portland Commissioner

