



PUBLIC HEALTH DIVISION  
Drinking Water Program

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May 17, 2012

David Shaff, Administrator  
Portland Water Bureau  
1120 SE 5<sup>th</sup> Avenue  
Portland, OR 97204

Dear David:

This letter responds to your February 10, 2012 request for a delay to the Portland Water Bureau (PWB) compliance schedule for meeting the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) requirements for uncovered finished water reservoirs. PWB must complete two projects to comply; PWB proposes delaying the eastside project 8.5 years and the westside project 5.5 years.

### Background

#### *LT2 and EPA*

LT2 requires all public water systems that store treated ("finished") water in uncovered reservoirs to either cover the facilities or treat the effluent to achieve inactivation and/or removal of 99.99% of viruses, 99.9% of *Giardia* and 99% of *Cryptosporidium*. Water systems had to either meet this requirement or be on an approved compliance schedule no later than April 1, 2009.

PWB chose to provide covered reservoirs rather than treat the effluents of existing reservoirs and so notified the Environmental Protection Agency (EPA), the Primacy agency for the LT2 rule at the time. PWB would comply by constructing covered reservoirs and, upon completion, disconnecting PWB's five uncovered reservoirs. Further, PWB proposed dates for disconnecting the Mt. Tabor and Washington Park uncovered reservoirs to the EPA: the three reservoirs on Mt. Tabor would be disconnected by December 31, 2015, and the two in Washington Park would be disconnected by December 31, 2020.

On March 25, 2009, PWB submitted to EPA additional detail regarding interim milestone deadlines as part of PWB's proposed compliance schedule. The schedule reiterated the original completion dates proposed by PWB to no longer

rely on uncovered finished drinking water reservoirs. In a memo to Commissioner Leonard also dated March 25, 2009 (the date of PWB's proposed compliance schedule to EPA), PWB stated that the compliance schedule option being proposed by PWB to EPA "allows some projects to be built concurrently without interfering with operations and customer service." Two days later, EPA accepted and approved the schedule as submitted by PWB.

Thus, the completion dates which PWB is subject to are the dates PWB proposed to EPA.

Prior to LT2 requiring this action, PWB expressed its clear intent to cover its uncovered reservoirs on numerous occasions. For example, PWB wrote a letter to EPA September 18, 2002 describing proposed action to improve PWB's lead (Pb) control program, essential to minimize exposure to this potent neurotoxin. In this letter, PWB cited covering or replacing the existing uncovered reservoirs as the primary long-term strategy to reduce lead exposure through drinking water, and stated an anticipated date of July, 2006 for covering or replacing all uncovered reservoirs.

#### *LT2 and OHA*

On July 8, 2009, EPA granted the Oregon Health Authority (OHA) Interim Primacy for the LT2 rule, and OHA continues to have Interim Primacy over LT2.

As the lead enforcement agency, OHA has discretion under state statutes and rules to extend formal compliance schedules, and has done so on occasion at the request of water suppliers. If a water supplier requests an extension to an agreed-upon compliance schedule, OHA thoroughly reviews the request to determine if a delay is necessary and thus an extension is warranted under the circumstances.

More specifically, the water supplier must be able to demonstrate continuing, steady progress toward compliance, and that specific, unforeseen circumstances outside the water supplier's control have caused the delay. Examples of such circumstances have included delays in construction due to weather, contractors, equipment availability, supply delivery, or unexpected geologic conditions; delays in necessary state or federal project funding; and delays in permitting and approvals by other governmental agencies. In all cases, OHA re-evaluates interim public health risk and mitigation measures required in the compliance agreement to assure that public health is protected during the unavoidable delay.

*Prior PWB Request*

OHA followed the practice outlined above when, on June 8, 2010, PWB requested a modification from OHA of one of the interim milestone deadlines in the original LT2 compliance schedule. PWB's request included demonstration of continuing, steady progress towards compliance, and articulated the specific circumstances that caused the need for a delay. OHA approved this interim milestone modification on June 15, 2010. We noted then and do again today that PWB did not request any change to its ultimate compliance date, and the date of disconnecting the reservoirs from the water system remained unchanged.

*Current PWB Request*

PWB now requests a modification that results in project delays of 8.5 years and 5.5 years based on unchanged circumstances, and an apparent multi-year suspension of effort toward regulatory compliance. Figure 1 below is reproduced from PWB's current request to OHA:

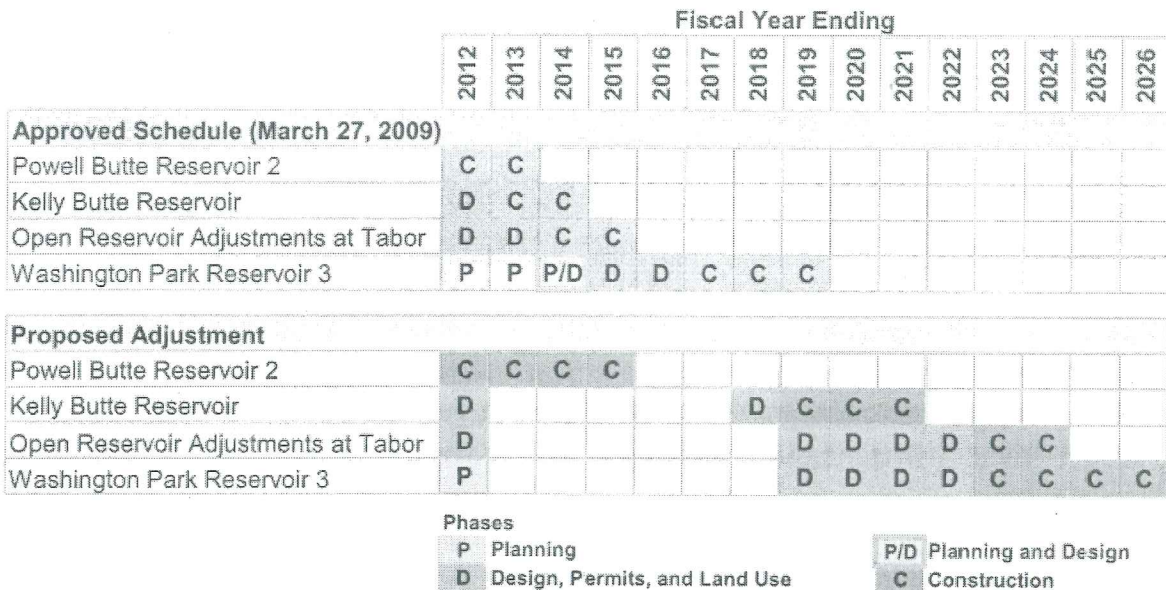


Figure 1. Time Line Showing Approved Schedule and Proposed Adjustment for Major Projects<sup>a</sup>

<sup>a</sup>Small supporting system improvement and transmission projects are shown in the detailed schedule available as Attachment B.

*Benefits of Covered Reservoirs*

EPA has long stated that storage of treated drinking water in uncovered reservoirs can lead to significant water quality degradation and increased health risks to consumers (See, e.g., Uncovered Finished Water Reservoirs Guidance Manual,

EPA, April 1999; Federal Register, January 5, 2006, pp 713-715). The LT2 requirement to cover or treat water from uncovered reservoirs is intended to protect against the potential for recontamination of treated water by disease-causing organisms such as viruses, *Giardia* and *Cryptosporidium*. Such recontamination can occur from a wide variety of sources, including bird and animal wastes, human activity, algal growth, insects and airborne deposition. Uncovered reservoirs have also been known to cause water quality degradation such as increases in turbidity, bacteria growth, particulates, disinfection by-products, taste and odor problems, and nitrification of chloraminated water. Over the years, a number of specific contamination incidents associated with Portland's uncovered reservoirs have been reported by PWB and the local media.

Nationally, most uncovered reservoirs were constructed between the late 1800s and the early 1940s. Since then, it has been the standard of practice within the drinking water industry to cover newly constructed finished drinking water reservoirs, as indicated in the Ten State Standards, US Public Health Service standards, American Water Works Association policy, EPA regulations, as well as Oregon construction standards. According to EPA's Uncovered Finished Water Reservoir Guidance Manual, 750 uncovered reservoirs were in use across the United States in the mid-1970s, with the number falling to approximately 300 by 1992. According to EPA, the number dropped to 81 by 2006. In 2012, only 38 uncovered reservoirs remain in the US, including 5 in Portland. Uncovered reservoir projects in two other Oregon communities are complete and a third Oregon community will complete its project this year.

#### *Public Health and Security Co-Benefits*

In addition to the risks associated with uncovered reservoirs identified above, there are also important co-benefits to covering or replacing uncovered reservoirs. Because uncovered reservoirs allow for atmospheric exchange with the water, the associated water chemistry changes can interfere with optimizing corrosion control treatment. This interference may result in higher concentrations of lead (Pb) in water at the tap. In addition, the chlorine on which PWB depends to treat its water can dissipate in uncovered reservoirs, depleting disinfectant residuals in the distribution system intended to protect against bacterial regrowth and recontamination. Finally, uncovered reservoirs present security risks for intentional contamination of or damage to the water supply.

Conclusion

PWB requests a delay in complying with the federal uncovered finished water reservoir requirement. However, PWB's request does not identify any specific circumstances not previously known to PWB when PWB a) proposed its compliance schedule in 2009, or b) proposed its interim milestone modification in 2010. Further, the proposed timing appears to reflect a suspension of effort to comply with the mandated regulation, rather than continuing, steady progress toward regulatory compliance.

Thus, PWB's compliance schedule approved by EPA on March 27, 2009, with the interim milestone modification approved by OHA on June 15, 2010, remains in effect.

We are mindful of the technical and economic challenges communities face in providing safe drinking water to their consumers. OHA remains committed to working with PWB as you work steadily to comply with regulatory requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Leland". The signature is fluid and cursive, with the first name "Dave" and last name "Leland" clearly distinguishable.

Dave Leland, PE, Manager  
Drinking Water Program

DEL:dw