



# FRIENDS *of the* RESERVOIRS

*Citizens joining to protect Portland's historic reservoirs and water system*

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Mr. David Leland  
Oregon Health Authority, Drinking Water Program  
P.O. Box 14450  
Portland, Oregon, 97293

June 21, 2013

**Sent via e-mail**

Dear Mr. Leland,

This letter responds to the Oregon Health Authority's rejection of the City of Portland's request to defer "onerous" LT2 open reservoir projects at Mt. Tabor and Washington Park, projects that by all accounts will provide no measurable public health benefit. We ask that the OHA and the City of Portland go back to the drawing board and work together to approve a lengthy deferral.

In denying Portland's first request for deferral of LT2 open reservoir projects, OHA provided no basis other than to state that EPA required steady project progress, barring construction delays. Rochester's deferral of all LT2 reservoir projects including preplanning, related to their two historic open reservoirs set in City parks, until at least 2022, demonstrates that EPA is not requiring continued steady, project progress. There is no deadline in the LT2 rule itself for completing LT2 reservoir projects.

A thorough review of OHA's second denial and internal communications finds no legitimate or scientific basis for denial. We have concerns that this may have been a political decision.

OHA internal communications indicate what we know to be the case, that there remains opportunity for OHA and the City of Portland to work out a rational deferral plan. A broad-based coalition of organizations support a lengthy deferral, one that allows Portland to benefit, alongside Rochester, NYC and others, from the LT2 rule revision, set for 2016. (Please see coalition [letter](#) to OHA November 19, 2012, updated December 10, 2012)

Director Bruce Goldberg's April 28, 2013 e-mail communication to Dave Leland suggests that there could be options that could be put in place beyond full-scale changes to assure water safety, "willing to consider other suggestion city might have to assure water safety etc."

Though Dave Leland is quick to dismiss this suggestion, he does state in his reply to Goldberg "The City is of course (is) free to try to continue the discussion later with us if they choose, like anyone else."

## OHA/ PORTLAND FAILURE TO COMMUNICATE

A review of the process makes clear that there was a complete failure to communicate in any meaningful, substantive way with the City of Portland while evaluating the City's deferral request. OHA and the City of Portland must work together in support of a rational outcome, an extension of

the time line. This failure to communicate stands in stark contrast with the cooperative nature of the agreement which allows Rochester a 10-year deferral of plans to "treat" at the outlet of their two historic open reservoirs set in City parks.

## ROCHESTER AND PORTLAND COMPARISON

OHA stated that Portland and Rochester water systems are not similar water systems. Indeed, most water systems have differences from other water systems. However, differences are not a basis for denial. OHA states that Rochester has a filtration plant and suggests that Rochester is deferring its LT2 open reservoir projects (treatment at the outlet of the open reservoirs) in order to pay off the filtration plant. Rochester's filtration plant is a source water filtration plant, not a post reservoir treatment plant. Rochester has only minimally sampled the water exiting their filtration plant, so to use OHA logic, we do not know if this filtration plant is protective of public health. We do know that all public health problems have occurred in systems where a filtration plant was in place. More to the point, documents obtained from officials in Rochester state that they are deferring open reservoir projects ( *Cryptosporidium* treatment at the outlet of their open reservoirs) for a number of reasons including revision of the "onerous" LT2 rule (see Rochester documents provided OHA in November 2012).

Unlike Rochester, Portland ratepayers will be paying off \$40 million in open reservoir upgrade projects until approximately 2030, \$23 million of which are associated with a 2007-2011 Slayden Corporation construction contract # 37524, one of four recent open reservoir upgrade contracts. A consulting firm, Montgomery Watson Harza Global, was hired by the Portland Water Bureau and studied the open reservoirs under a 9-year contract. One of their tasks was to list [projects](#) (see pp. C1-5 in this link) that would maintain the safe function of the reservoirs until **2050**. The majority of these projects were completed under four contracts. (These documents were secured through public records requests.)

Good governance says that these investments should be protected, particularly given that sound scientific study confirms that Portland's open reservoirs already meet the goal of the LT2 rule, which is intended to reduce the level of disease in the community from *Cryptosporidium*, Giardia and virus. And like all open reservoirs, Portland's open reservoirs have never been the source of any disease.

## OHA OMITTS CRITICAL FACT, IGNORES LOW-COST OPTIONS

OHA maintains that a legitimate OHA reason for denial of deferral of LT2 *Cryptosporidium* reservoir projects is that Rochester treats at the outlet for bacteria and Portland does not. OHA fails to acknowledge that the chlorination facilities located at Portland's open reservoir sites are capable of treating at the outlet for bacteria if this were ever deemed advisable or necessary (See PWB communication with OHA and MWH 9-year study documents). Both Rochester and Portland have chlorination facilities located on site, next to historic open reservoirs. Rochester uses free chlorine and Portland chloraminates its drinking water.

The chlorination facilities in Portland are currently used only to provide a "boost" of chlorine when necessary. OHA has been advised by the Portland Water Bureau that Portland could use these chlorination facilities to retreat for bacteria. (See public records- PWB communication with OHA, and MWH global 9-year reservoir study documents.)

1. Why did OHA omit the fact that Portland could retreat for bacteria if adding more chlorine beyond "boosting" is deemed a Rochester advantage?
2. Does OHA recommend that Portland retreat for bacteria beyond adding a "boost" of chlorine when necessary? What would be the measurable public health benefit or scientifically documented reduction in risk from adding more chlorine or re-treating the water?

We look forward to OHA's prompt response to each of these questions and others that follow.

As OHA is aware, bacteria commonly occurs in buried infrastructure, buried tanks and buried distribution piping (see information below).

## BIRD WIRES

OHA is seemingly suggesting that Rochester's having installed bird wires is a public health advantage, while offering no scientific evidence to support this. The PWB could install bird wires. The PWB's 9-year reservoir study ( MWH Contract # 30491, Volume 4 *Facilities Evaluation*) recommended installation of bird wires around the year 2018. The recommendation to delay installation until 2018 is indication that MWH Global had no immediate public health concerns. The same study indicated that there had never been any public health problems associated with open reservoirs. The City's 2004 *Independent Reservoir Panel* that cost ratpayers more than \$500,000, recommended installation of bird wires. The PWB ignored this recommendation while proceeding to spend \$40 million on open reservoir upgrade projects. Either the PWB has been negligent in their failure to install bird wires or they did not believe birds to be a public health risk.

Does OHA believe that the Water Bureau has been negligent or incompetent in failing to install bird wires?

Does OHA believe the Portland Water Bureau should install bird wires and, if not, why did OHA reference Rochester's bird wires if OHA does not believe that they are beneficial?

## CONTAMINATION IN COVERED AND OPEN RESERVOIRS

OHA suggests that open reservoirs are subject to recontamination and that any bacteria is a threat to public health. As is well documented in literature, locally and around the nation, both open and covered storage facilities are subject to recontamination, including bacteria contamination. Most importantly, only covered storage facilities have been demonstrated to be the source of any public health problems, deaths and illnesses. EPA's Total Coliform Rule white paper, *Finished Water Storage Facilities*, documents instances of covered storage public health problems as does the EPA LT2 rule itself. ( See Gideon, Mo. Salmonella outbreak.)

In Portland, contamination of a buried tank occurred on May 27, 2012. This 2012 break-in of Reservoir 7 involved vandals breaching the buried tank and throwing into it a bottle of hydrochloric acid and other items. ( PWB Incident Reports were secured through public records requests.)The PWB failed to inform the public of this contamination. The PWB withheld this information from Oregon Health Authority for a month.

## BACTERIA IN UNDERGROUND INFRASTRUCTURE

Bacteria is detected throughout Portland's distribution system including at the buried Powell Butte tank and at other locations such as the October 2012 E-coli detected in Sellwood at 9<sup>th</sup> and Ochoco (underground infrastructure). The Portland Water Bureau reports that they spent significant public resources preparing for a massive boil water alert responsive to the October 2012 Sellwood bacteria detect. Though a boil water alert was averted, OHA communications with the PWB (secured through PWB public records requests) raises questions about what appears to be a disparity in OHA's handling of E-coli detects when they occur in underground infrastructure, including the detect at the Sellwood site. (See Carrie Gentry e-mail to Yone Akagi which advised in advance of the repeat sample results, that even if the repeat sample returned positive for E-coli or Coliform OHA would consider invalidating if other sample sites were negative).

The city of Tigard issued a boil water alert in 2012 as a result of an E-coli detect in their distribution system (in underground infrastructure).

There is no regulatory requirement to cover open reservoirs to address bacteria. Such a requirement would be irrational. Covered reservoirs are subject to recontamination and bacteria (Coliform and E-coli) detects but are problematic in other ways. For example, nitrification is documented as a risk in the LT2 rule itself and in EPA white papers associated with the recent revision of the Total Coliform rule. (See LT2 1997 study of New Jersey reservoirs and EPA Total Coliform Rule Nitrification white papers)

The appropriate response to bacteria detects including the non-infectious bacteria at the Washington Park reservoir is for the utility to determine the source of the problem and take corrective action such as improved basic system maintenance.

## LOW PUBLIC HEALTH RISK

We know of no scientific evidence that demonstrates a difference in public health risk between covered reservoirs and open reservoirs. The LT2 open reservoir "treat or cover" requirement is not based on any national sampling data. EPA failed to conduct even one single national round of sampling at open and/or at covered storage facilities.

At the April 2012 EPA public meeting related to the requirement to review and revise the onerous LT2 rule, Tacoma's engineer Chris McMeen in describing their reservoir covering program did not identify any LT2 *Cryptosporidium*, Giardia or virus problems with their open reservoirs. Instead he concluded his presentation by stating that the public health risk to their open reservoirs was low, it was the same public health risk as with their covered storage, and that there were no differences in public health risk. OHA advised that Kari Salis listened in on at least part of this meeting. Even if she missed McMeen's conclusion, she heard no scientific evidence which described a measurable difference in public health risk between covered and open reservoirs. EPA's engineer, LT2 lead Stig Regli, could offer no review of any scientific evidence that supports the reservoir requirement or a difference in public health risk. To our knowledge none exists.

The official LT2 record (reviewed by the City of Portland and community stakeholders such as Friends of the Reservoirs ) contains no more than a handful of documents that mention the words "open reservoirs" (there are approximately 700 documents in the record) and no national sampling data on open reservoirs exists.

The LT2 record contains but a single 1997 study of non-engineered, lake-like open reservoirs in New Jersey conducted by Mark LeChevalier, William Norton, and Thomas Atherholt. Their published report (AWWA Journal volume 89, issue 9), *Protozoa in Open Reservoirs*, did not support a LT2 "treat or cover" requirement for open reservoirs because the public health risk was described as low. Rather, the researchers concluded by referencing the well-known risks associated with covered storage, "nitrification" (a serious problem common to systems using covered storage and chloramination), "degradation of water", and "problems with covers themselves". The researchers also stressed the importance of developing improved *Cryptosporidium* sampling methods, methods that accurately assess the viability and infectivity of *Cryptosporidium* oocysts, another of the significant LT2 issues that remains problematic today.

OHA is aware that the City of Eugene is currently having problems with contamination of a covered reservoir. The Seattle Times reported (July 17, 2009, *Major do-over for two Seattle reservoirs*) problems with MWH Global reservoir burial projects, contamination of newly constructed buried tanks due to leakage related to cover design. MWH Global is the same global engineering corporation that was involved in crafting the LT2 rule and is currently profiting from implementation of the LT2 rule.

## ECONOMICS

The arguments made by the City of Portland (February 4, 2013) and the coalition of organizations supporting a delay in the schedule and retention of the functionality of Portland's open reservoirs (November, 2012) should be re-examined. Since these communications in April 2013 the Water Bureau has taken on a significant amount of new debt. (See \$253,635,000 Water System Revenue and Refunding Bond, 2013 Series, <http://www.portlandoregon.gov/bfs/article/445929>)

Portland's LT2 compliance costs are approximately 90% higher than those being deferred in Rochester. Additionally, Portland just spent \$40 million on open reservoir upgrades. Among the nation's 50 largest cities Portland's water bills are the 8<sup>th</sup> highest according to a 2012 annual survey report by the American Water Intelligence. Portland ratepayers pay higher water bills than Phoenix, a city in the desert.

## DISCOUNTING SCIENTIFIC STUDY

OHA supports the expenditure of ratepayer dollars on participation in scientific research but discounts sound scientific peer-reviewed research when that research (AwwaRF 3021) does not support spending hundreds of millions on controversial reservoir projects for no measurable public health benefit.

It will take Rochester approximately 10 years to collect the statistically significant sampling data the Portland has collected to date at its open reservoirs (7000 liters AwwaRF 3021) and at our source water (over 10,000 liters). Rochester confirmed to us in May 2013 that they are sampling only 50 liters per month at their open reservoirs. Rochester, unlike Portland, has not participated in any scientific research at their reservoirs, nor have they collected any disease surveillance data that would support a deferral.

The AwwaRF 3021 researchers concluded that Portland already meets the goal of the rule which is to reduce the level of disease in the community from *Cryptosporidium*, Giardia and virus. This was based on statistically significant sampling at the outlets of Portland's open reservoirs.

## EPA LT2 REGULATORY REVIEW, REVISION, NEW RESERVOIR SCIENCE

We believe that the LT2 revision process will result in alternatives for the open reservoirs.

Responsive to Obama's [Executive Order 13563](#) that agencies revise and repeal onerous regulations on March 18, 2011 [NYC submitted substantive, detailed comments](#) (see pp. 1-10) including very specific objections to LT2 open reservoir requirements (pp. 8-10).

When EPA ignored NYC's request to include revision of the LT2 as part of this review process Senator Schumer, Mayor Bloomberg, and NY's entire Congressional delegation intervened.

EPA agreed to review the regulation both as part of standard review process, but more significantly, under Obama's Executive Order mandating revision or repeal of onerous regulations.

Contrary to OHA's assertion, that there is no new evidence, New York submitted more than 167 pages of new scientific data and research. Portland submitted the AwwaRF 3021 scientific peer-reviewed study and information on Portland's massive 7000 liters of sampling data plus disease surveillance data (source water variance). Rochester will be submitting new data. In light of the fact that EPA's LT2 "treat or cover" requirement was based on ZERO scientific data and no scientific research that supported a "treat or cover" requirement, the "onerous" requirement must be revised to be in compliance with Obama's Executive Order and to restore some level of trust in government. EPA is required to evaluate alternatives.

We remain concerned about the clear conflicts of interest related to [engineering firm's](#) involvement in both crafting the EPA LT2 regulation and profiting from implementation of the regulation.

## CONCLUSION

For the many reasons stated above and in previous communications, Portland stakeholders request that OHA immediately engage in a cooperative effort with the City of Portland to approve a well-deserved lengthy deferral of onerous LT2 reservoir projects.

Sincerely,

Floy Jones for Friends of the Reservoirs

Cc Mayor Hales and Portland City Council

Representative Earl Blumenauer

Senator Merkley

Interested Parties