

January 3, 2012

RE: Comments on Portland Water Bureau's Request for Variance Under 42 USC 300g-4(a)(1)(B) and OHA's Notice of Intent to Grant Variance

To Whom It May Concern,

We strongly support the stated intent of the Oregon Health Authority (OHA) to grant a variance to the Portland Water Bureau from requirements of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) to additionally treat Bull Run source water. However, we request modifications and additions to OHA findings and changes to the OHA's proposed order regarding conditions.

The Bull Run is the most highly protected watershed in the nation and, as such, is at very low or no risk for contamination by human-infectious *Cryptosporidium* and other diseases and pollutants transmitted by humans and animals. Confidence in government at all levels appears to be waning. Your decision to grant a variance to the City of Portland, along with reasonable and rational conditions, can prevent the waste of hundreds of millions of dollars and help restore trust in government to make decisions based on sound science and not on emotion or fear.

**1) We strongly support the Oregon Health Authority's general intent to grant a ten year variance.**

***We believe the Portland Water Bureau (PWB) has more than adequately demonstrated that the characteristics of the untreated source water are such that the additional treatment is not necessary.<sup>1</sup>***

We note the following statements of fact:

a) "No outbreaks of cryptosporidiosis have ever been attributed to PWB drinking water as a source."

PWB Variance Request Section 5.4.1 p. 5-5

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<sup>1</sup> Portland Water Bureau Treatment Variance Request, June 6, 2011, including Section 4 and Section 5 "Local Public Health Data and Public Health Workshop"

<http://www.portlandonline.com/water/index.cfm?c=54913&a=350654>

See Appendix A of these comments.

b) "Adding additional water treatment to Bull Run is not likely to result in a measurable decrease in the occurrence of reported cases of cryptosporidiosis based on the current conditions characterized in the Bull Run."

PWB Variance Request Section 5.5.1 p. 5-9

PWB Public Health Expert Panel<sup>2</sup>

See Appendix A of these comments

c) "Water sampling data from Bull Run ... has demonstrated compliance with the EPA standard of a maximum contamination goal of zero oocysts for *Cryptosporidium*. This result is consistent with the view that there is very low or no risk for *Cryptosporidium* contamination of our highly protected and geographically isolated Bull Run water source..."

"My strong opinion, based on available water quality and epidemiologic information is that our current Bull Run water source, storage and handling systems provide us with a safe water supply."<sup>3</sup>

Thomas T. Ward, MD<sup>4</sup>

***We believe that a variance would not provide an unreasonable risk to public health. Indeed, denial of a variance may increase risk to public health.***

If there were construction of another treatment system, there would be increased pressure to open the Bull Run Management Unit to logging, development and recreation. The argument: Why should these activities be prohibited if Portland's water is additionally treated? While now there is only a theoretical risk of cryptosporidiosis originating in Bull Run water, that could change over the long-term if a variance is denied, or issued and then revoked. If either were to occur, there would be more humans in the watershed and it would be more likely to see an increase in *Cryptosporidium hominis*, total and fecal coliforms, pharmaceuticals, etc.

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<sup>2</sup> Panel: Jeffrey Griffiths, MD Tufts University

Scott Meschke PhD Microbiology University of Washington

David Spath PhD Civil and Environmental Engineering Consultant, formerly of California Department of Health Services

Thomas Ward MD Oregon Health and Science University

Marylynn Yates PhD Microbiology University of California Riverside

Panel Resources: Gary Oxman, MD Tri-County Health Officer (Multnomah, Clackamas, and Washington counties)

Amy D. Sullivan, PhD, MPH Communicable Disease Services Program Manager, MCHD

<sup>3</sup> From Letter of Dr. Thomas Ward to Portland City Council March 8, 2011

<sup>4</sup> Co-Director of Oregon Health Science University Medical School Microbiology Course, Director of the OHSU Infectious Disease Fellowship Training Program, Professor of Medicine at OHSU, Board Director for the Research and Education Group (Portland's HIV community clinical research consortium), past President of the Oregon Infectious Diseases Society.

in Bull Run drinking water.

The history of logging in the Bull Run watershed highlights the unpredictable nature of economically and/or politically driven decisions regarding logging management. (See **7**) of these comments.) Current good intentions do not preclude future bad decisions related to logging and recreation management that could result from a decision to not grant the variance or to revoke the variance.

Construction of an additional treatment system could generate other risks to the Bull Run Management Unit and to public health. These include, but are not limited to, increased risk of construction-related fire in the geographically isolated watershed, introduction of pathogens and invasive species with increasing numbers of workers carrying contaminants into the watershed, accidental release of mercury into drinking water conduits with use of a UV treatment plant, potential for vaporization of mercury in a Bull Run treatment plant and delivery of mercury into drinking water, potentially harming workers and the public <sup>5</sup>, and/or changes in water chemistry with new, daily exposures to plastic polymers, aluminum, acrylamide, etc. <sup>6</sup>

## **2) We support OHA's draft conditions regarding watershed control, stewardship and protection.**

The Bull Run is the most highly protected watershed in the nation and, as such, is at very low or no risk for contamination by human-infectious *Cryptosporidium* and other diseases and pollutants transmitted by humans and animals. It is by maintaining and improving current restrictions on human entry, human activities and entry of domestic animals that we can continue to avoid transmission of human-infectious disease in Bull Run water.

## **3) We do not support OHA's draft conditions regarding monitoring.**

Water sampling methods should go beyond Method 1623 to include verification (to include fully intact internal structure of an oocyst from a source infectious to humans), confirmation of infectivity, and genotyping. Otherwise, a single detection of an

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<sup>5</sup> "Balancing Risk versus Benefit in the Selection of Equipment for Portland's Bull Run UV Disinfection Facility" Bryan Townsend, Chad Talbot, Harold Wright, David Peters and Timothy Phelan April 2011 IUVA News Vol. 13 No. 1 pp. 22-29

Retrieved from <http://bojack.org/images/bullrunuvriskarticle.pdf>

<sup>6</sup> Conventional Water Treatment: Coagulation and Filtration

Safe Drinking Water Foundation

[http://www.safewater.org/PDFS/resourcesknowthefacts/Conventional\\_Water\\_Filtration.pdf](http://www.safewater.org/PDFS/resourcesknowthefacts/Conventional_Water_Filtration.pdf)

oocyst not pathogenic to humans could trigger the construction of an unnecessary treatment plant.

“Genotyping to determine whether any future detections of *Cryptosporidium* in the Bull Run source are human-infectious species is essential to determine the public health implications (if any).... A single detection of a small number of *Cryptosporidium* oocysts should not automatically terminate eligibility for the variance since the public health consequences of an isolated detection are not measurable. A better trigger for terminating the variance would be based on monitoring results which demonstrate a continued presence of human-infectious *Cryptosporidium* or signs in the community of waterborne disease transmission.”

PWB Monitoring Expert Panel <sup>7</sup>

PWB Variance Request Section 6.3.2 p. 6-5

#### **4) OHA should acknowledge the flaws of Method 1623 and modify the draft monitoring conditions.**

It is irrational for OHA to rely solely on Method 1623 to determine when increased monitoring should commence and/or that a variance may be revoked when a single oocyst is detected. At present, this test fails to genotype and to distinguish between 1) *Cryptosporidium* that is infectious to humans and not infectious to humans and 2) *Cryptosporidium* that is viable and that which is not. Water quality experts are working very hard to convince the EPA to correct this flaw. (See Water Research Foundation/American Water Works Association expert White Paper<sup>8</sup> and White Paper [summary](#)<sup>9</sup>.)

From the White Paper summary: “Currently, U.S. Environmental Protection Agency (USEPA) methods 1622 and 1623 are approved for determining the occurrence of *Cryptosporidium* in untreated source waters and these methods provide the basic framework for characterizing risk under the LT2ESWTR. Since the inception of the LT2ESWTR, significant advances in both parasite molecular genetics and laboratory diagnostic methods have dramatically improved and expanded our knowledge of *Cryptosporidium* biology, creating a new knowledge base for understanding the risks

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<sup>7</sup> On May 2 and 3, 2011 the PWB convened this panel to examine various monitoring concepts and programs and “to help develop and evaluate monitoring elements that PWB may be required to implement should OHA-DWP grant a variance.”

Panel: Jennifer Clancy PhD, Stephen Estes-Smargiassi MS, Eva Nieminski PhD, Paul Rochelle PhD, David Spath PhD

<sup>8</sup> “Developing a Strategy to Increase the Value of Regulatory *Cryptosporidium* Monitoring: *Cryptosporidium* Detection Method Research Needs

White Paper Based on an Expert Workshop in Golden, Colorado, August 5–6, 2008

See <http://www.waterrf.org/ProjectsReports/PublicReportLibrary/4178.pdf>

<sup>9</sup> Summary of above [Project 4178 Web-only] at

[http://www.waterrf.org/ProjectsReports/ExecutiveSummaryLibrary/4178\\_NON\\_ExecutiveSummary.pdf](http://www.waterrf.org/ProjectsReports/ExecutiveSummaryLibrary/4178_NON_ExecutiveSummary.pdf)

that these parasites pose to public health. It is probable that application of this knowledge and the laboratory tools that have been developed will help inform risk management decisions. A coordinated effort is needed to consolidate and apply this knowledge and the laboratory tools into a regulatory framework for the water industry..."

"This white paper includes the following:

1. A review of the current state of knowledge of *Cryptosporidium* biology, which is critical for the evaluation of tools for effectively assessing risk of exposure associated with drinking water.
2. A discussion of genotyping, cell culture, and sample preparation methodologies, including viability and infectivity determinations, in the context of their readiness and robustness for application into future frameworks.
3. A summary of advantages and disadvantages of the above methods with respect to ease of use, practicality, quality assurance and quality control (QA/QC) issues, potential interferences, detection limits, and resolution (for genotyping methods).
4. Identification of analytical developments in the areas of sample collection, concentration, purification, and molecular tools that show promise for *Cryptosporidium* analysis."

From a 2008 article entitled: "*The Risk of Cryptosporidiosis from Drinking Water*":

"The current methods of *Cryptosporidium* detection in untreated surface water (Method 1622 and 1623; USEPA, 2005) use an antibody based detection method to identify oocysts. This method only provides presence/absence detection of oocysts. The absence of sporozoites within the oocyst (determined by DAPI staining and/or DIC microscopy) suggests that the oocyst is not infectious but the presence of sporozoites does not mean that the oocyst is infectious to humans. An intact oocyst may not be *C. parvum* or *C. hominis* or the oocyst may be sufficiently damaged that it will not cause infection in humans. The detection of non-infectious oocysts or oocysts belonging to a species that is not infectious for humans could cause unwarranted concern for a contaminant that may not be a significant public health risk."<sup>10</sup>

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<sup>10</sup> *The Risk of Cryptosporidiosis from Drinking Water*, p. 5

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We believe that OHA language should include confirmation by a second EPA-approved laboratory of any initial monitoring results from an EPA-approved laboratory that test positive for *Cryptosporidium*. Portland's Variance Request and the Monitoring Expert Panel<sup>11</sup> that convened to provide input on proposed monitoring conditions support this. Given the radical impact that detection of a single oocyst has on Portland's ability to maintain the variance, the panel advised PWB of the importance of establishing confirmation of any positive *Cryptosporidium* result at the raw water intake through a secondary independent laboratory.

We feel strongly that OHA language should include genotyping and determination of infectivity of any monitoring results that test positive for *Cryptosporidium* to determine the public health impacts or lack thereof. We believe that genotyping to determine whether any detections of *Cryptosporidium* in the Bull Run watershed are human-infectious species (from an oocyst with intact internal structure) would be essential to determine relevant public health implications, if any. Most cases of cryptosporidiosis are linked to two species of *Cryptosporidium*, *C. hominis* and *C. parvum*, which are associated with human and domesticated animal sources. (Both of these sources are generally prohibited in the Bull Run watershed and Bull Run Management Unit and these prohibitions are enforced.)

"Molecular epidemiology is being used increasingly to understand pathogen transmission patterns, detect outbreaks, and identify important risk factors and outbreak sources." <sup>12</sup> If the Centers for Disease Control and Prevention (CDC) values and utilizes molecular epidemiologic tools, why should not the OHA include the use of the same tools in its conditions for monitoring Bull Run water?

"In addition, bolstering waterborne disease surveillance can promote prevention and control. For example, given that *Cryptosporidium* is the primary etiologic agent of recreational-water associated outbreaks and has the ability to cause communitywide outbreaks, CDC should systematically collect stool specimens and utilize molecular epidemiology tools to subtype isolates to help elucidate the epidemiology of cryptosporidiosis." <sup>13</sup>

The value of molecular subtyping of *Cryptosporidium* isolates was underscored in Oklahoma in July, 2007 when it enabled public health officials to determine that two distinct outbreaks of cryptosporidiosis had occurred in neighboring counties during

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<sup>11</sup> On May 2 and 3, 2011 the PWB convened this panel to examine various monitoring concepts and programs and "to help develop and evaluate monitoring elements that PWB may be required to implement should OHA-DWP grant a variance."

*Panel:* Jennifer Clancy PhD, Stephen Estes-Smargiassi MS, Eva Nieminski PhD, Paul Rochelle PhD, David Spath PhD

<sup>12</sup> CDC Morbidity and Mortality Weekly Report Surveillance Summaries , p. 4  
Vol. 60 No. 12 September 23, 2011

<sup>13</sup> Ibid p.29

the same month. This process distinguished between *C. hominis* and *C. parvum* infections originating in different recreational waters. “<sup>14</sup> Without use of these tools, it might have been presumed that there was a single source and type of infection.

Given the sad state of the only EPA-approved method for sampling for *Cryptosporidium*, we do not support a MCL of zero and we do not believe that a single detect (which may or may not be infectious to humans) necessarily indicates a public health concern.

For the above reasons, we do not support a public notification requirement for a simple detection of an oocyst through current Method 1623. We cannot overstate: There is no reason to create public fear when “an intact oocyst may not be *C. parvum* or *C. hominis* or the oocyst may be sufficiently damaged that it will not cause infection in humans. The detection of non-infectious oocysts or oocysts belonging to a species that is not infectious for humans could cause unwarranted concern for a contaminant that may not be a significant public health risk.”<sup>15</sup>

Additionally, we believe that OHA language should include the option for the PWB to use ten liter samples. The ability to use 10 liter samples enables continuity of the intake *Cryptosporidium* monitoring data.

**5) We request that the variance findings include an acknowledgement that Method 1623 is outdated, that the LT2 Rule is faulty, and both are now in the process of being reviewed and revised by the EPA. We also request that OHA proposed monitoring conditions be modified to reflect this information as well.**

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<sup>14</sup> Ibid Appendix B: Descriptions of Select Waterborne Disease Outbreaks Associated with Recreational Water Use”, p. 36

<sup>15</sup> *The Risk of Cryptosporidiosis from Drinking Water*, p. 5

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WQTC Conference Proceedings

**a) Method 1623 is currently under review.**

See “Notice of a Public Meeting on Long Term 2 Enhanced Surface Water Treatment Rule: Initiate Regulatory Review – Cryptosporidium Analytical Method Improvements and Update on Source Water Monitoring”<sup>16</sup>

**b) Monitoring indicates *Cryptosporidium* threat is lower than thought.**

*From American Water Works Association (AWWA) December 13, 2011*<sup>17</sup>

“At a stakeholder meeting Dec. 7 on the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2), the US Environmental Protection Agency presented preliminary data suggesting that *Cryptosporidium* is less prevalent in drinking water supplies than anticipated by the current rule...One agency conclusion is that the lower level of observed occurrence appears to be real and not due to a systematic change in recovery.” See Appendix B of these comments.

**c) AWWA and others state significant concerns with Method 1623.**

They and we want concerns addressed, including:

- “Consider... modifying the monitoring in a way that provides more value to water systems and informs health risk reduction.
- Identify opportunities to reduce costs where possible.
- Genotype positive samples, which would be informative.
- Consider improved accuracy of the analytical method and the implications for treatment requirements, if USEPA is going to pursue improved oocyst recovery.” See Appendix B of these comments.

**d) AWWA states significant concerns with the LT2 rule.**

The flawed Method 1623 adversely affects the entire LT2 rule. Alan Robertson, AWWA director of regulatory relations has stated: “Pursuing changes to LT2ESWTR construct is akin to pulling a thread on a sweater in that changing one aspect of the rule rapidly impacts other elements of the rule construct in a cascade of interwoven dependencies.” See Appendix B of these comments.

**e) The LT2 rule is currently under review.**

“EPA plans to review the LT2 regulation as part of the upcoming Six Year Review process using the protocol developed for this effort. As part of the review, EPA would assess and analyze new data/information regarding occurrence, treatment, analytical

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<sup>16</sup> 76 FR 71560 <http://www.gpo.gov/fdsys/search/pagedetails.action?granuleId=2011-29776&packageId=FR-2011-11-18&acCode=FR>

<sup>17</sup> American Water Works Association, *Streamline*, Volume 3, Number 28 December 13, 2011 See Appendix B of these comments.



methods, health effects, and risk from all relevant waterborne pathogens to evaluate whether there are new or additional ways to manage risk while assuring equivalent or improved protection...Also, EPA intends to explore best practices that meet the SDWA requirements to maintain or improve public health protection for drinking water, while considering innovative approaches for public water systems.”<sup>18</sup> LT2 review is one of 16 early actions that are intended to yield in 2011 a specific step toward modifying, streamlining, expanding, or repealing a regulation or related program.<sup>19</sup> “EPA plans to conduct this review expeditiously to protect public health while considering innovations and flexibility as called for in EO 13563.”<sup>20</sup>

**6) While the OHA has stated that economic arguments can not be used in determining whether or not a variance is granted, we believe the OHA must consider cost and net benefits, performance objectives, alternatives, innovation, flexibility, scientific and technological objectivity, and plain common sense while setting final conditions for the proposed variance.**

Here we refer to the EPA’s August 2011 “**Criteria for Regulatory Reviews**”.<sup>21</sup> Our comments here are shaped by those criteria. *President Obama’s Executive Order 13563* led the EPA to designate the review of the LT2 rule a priority and one of 16 “early actions” that are intended to yield, in 2011, a specific step toward modifying, streamlining, expanding or repealing a regulation or related program.<sup>22</sup>

**Least burden?**

The proposed conditions have a huge impact on small and large businesses, and should be changed to reduce the impact while maintaining public health and environmental protection. Costs for proposed monitoring conditions are extremely high at a time when poverty and unemployment in our community are also extremely high. Ratepayers and business owners large and small are adversely affected. Their participation in our coalition is evidence of that.

Feasible alternatives to the proposed conditions exist that could reduce the

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<sup>18</sup> *Improving Our Regulations: Final Plan for Periodic Retrospective Reviews*, Section 2.1.9, p. 25  
U.S. Environmental Protection Agency August 2011  
<http://www.epa.gov/improvingregulations/documents/eparetrreviewplan-aug2011.pdf>

<sup>19</sup> *ibid* Section 2.1, pp. 17-18

<sup>20</sup> *ibid* Section 2.1.9, p. 24

<sup>21</sup> *ibid* Section 4.2, pp. 52-55

<sup>22</sup> *ibid* Section 2.1, pp. 17-18

proposed burden on OHA and local governments without compromising public health and environmental protection.

### **Net benefits?**

It is feasible to alter the proposed monitoring conditions to include verification and genotyping, for example, to achieve greater cost effectiveness while still achieving the intended public health and environmental results.

### **Performance objectives?**

We believe the proposed monitoring conditions have complicated or time-consuming requirements, such as intensive monitoring, that may not be justified, and that there are feasible alternative compliance tools, such as the stewardship conditions combined with routine monitoring, verification and genotyping, that could relieve burden while maintaining public health and environmental protection. As previously stated, a single detection of an oocyst during routine monitoring should not trigger intensive monitoring, and a single detection of an oocyst during intensive monitoring should not trigger revocation of the variance. Genotyping, cell culture, and sample preparation methodologies, including viability and infectivity determinations, will likely improve performance objectives.

### **Alternatives to direct regulation?**

We believe a feasible non-regulatory alternative exists to replace some or all of the proposed monitoring conditions while ensuring that public health and environmental objectives are still met.

### **Quantified benefits and costs / qualitative values?**

Proposed conditions exacerbate existing impacts and create new impacts on vulnerable populations such as low-income or minority populations, children, or the elderly.

High impacts from rate increases associated with unnecessary LT2 project(s) in Portland will harm vulnerable populations. The LT2 regulation has already exacerbated existing rate impacts and created new impacts on vulnerable populations by forcing rate increases to pay millions of dollars for the design of a Bull Run source water treatment plant that we believe to be wasteful and unnecessary.

Further increases in utility rates lead to further reduction in services for low income citizens. (See Appendix C of these comments to read about potential impacts to vulnerable populations served by Sisters of the Road and the Portland Housing Authority, for example.)

The cost of building an additional source water treatment plant or paying for

excessive monitoring is of great concern at any time, but is particularly painful during these economic times. Portland and its residents have real and critical public health and safety needs that must be met. Additional treatment for Bull Run source water is not a true public health and safety need. (See Appendix A of these comments.) Additionally, we find that the proposed monitoring conditions are not based on a true public health and safety need.

There are feasible changes that could be made to proposed conditions to better protect vulnerable populations.

### **Benefits justify costs?**

The benefits of OHA's proposed conditions do not justify the costs.

### **Innovation?**

We believe there are feasible changes that could be made to the proposed conditions to promote economic or job growth without compromising public health or environmental protection.

New or less costly methods, technologies, and/or innovative techniques have emerged that would allow the Portland Water Bureau to achieve the intended public health and environmental results more effectively and/or efficiently. These include verification, genotyping, molecular techniques, cell cultures, and sample preparation methodologies, including viability and infectivity determinations.

### **Flexibility?**

Conditions should allow for greater flexibilities to encourage innovative thinking and identify the least costly methods for compliance.

### **Scientific and technological objectivity?**

The science of risk assessment has advanced such that the adverse impacts (including the high costs) of proposed monitoring conditions on affected populations such as low income communities, vulnerable populations, children and the elderly could be reduced more effectively than through methods proposed by OHA.

The underlying scientific data has changed since this LT2 regulation was finalized. These changes support revision to the rule and to the monitoring conditions proposed by OHA.

The monitoring conditions currently proposed by OHA are not supported by recent developments in the science. Method 1623 requires out-of-date methods that do not protect public health. (See **4**) and **5**) of these comments.)

## **7) We request a correction in Notice of Intent, Finding #39 on page 11.**

It is important that decision-makers have an accurate appreciation of past decisions, policies, law and practices related to logging and human entry in the original Bull Run Reserve, the Bull Run watershed and the Bull Run Management Unit. Those who drink and use Bull Run water enjoy the results of unique protections and watershed controls.

The Bull Run water source has provided excellent and safe drinking water to residents of Portland and many other communities since 1895. The main Bull Run watershed has been closed to human entry for over 100 years. The fact that Bull Run continues to provide Portland families with clean drinking water over a century later is no accident-- it is the result of decades of hard work by citizen advocacy groups, elected officials and water providers. *Consistent water purity is a direct result of the watershed's isolation from human entry and development and the exclusion of livestock and domesticated animals.*

In 1892, President Harrison's proclamation established the Bull Run Reserve. Wary of waterborne diseases like cholera and typhoid, Portland residents turned away from contaminated water supplies in town and towards an isolated watershed that could be fully protected from human entry, human waste, development, domestic animals and their diseases.

In 1904, Congress adopted the Trespass Act, which through prohibitions on human entry and the grazing of domestic animals effectively kept logging, development and disease out of the Bull Run watershed. The protected area included a huge forested zone well beyond the ridgelines that define the drinking watershed. As noted by the PWB, "The original Reserve boundary included not only the 102-square-mile water-supply drainage, but an additional 117 square miles of land surrounding the drainage—a visionary action..."

In 1977, Congress passed Public Law (PL) 95-200, establishing the Bull Run Management Unit, shrinking the boundaries of the protected area, opening the Bull Run watershed to logging and opening the adjacent Little Sandy River watershed to human entry, recreation and logging. By 1993, more than 350 miles of roads--most to facilitate logging--were built in the main Bull Run watershed, causing sediment to flow into drinking water reservoirs. Some 37 percent of the Little Sandy watershed was clear-cut.

In the 1990's, when polluted run-off from road building and logging operations threatened to foul Bull Run water, citizens, conservationists, businesses and community organizations pushed the city of Portland to take a stand, stop these destructive projects, and work with Congress to once again protect the watershed and the forests surrounding it.

In 1996, we won passage of the Oregon Resources Conservation Act in Congress, which modified PL 95-200, adding a general prohibition on logging in the Bull Run watershed. With a decrease in the number of (loosely supervised) people entering the forest to plan, execute and mitigate logging sales, there was a parallel decrease in the risk of direct delivery of *C. hominis* to the drinking watershed.

In 2001, Congress adopted the Little Sandy Protection Act, expanding the size of the Bull Run Management Unit to include the Little Sandy watershed upstream of Aschoff Creek. It returned much of the “buffer” area south of the drinking watershed to the protected status originally established over 100 years earlier.

The Act stopped commercial and non-commercial logging. Slash burn fires, which often follow logging operations, ceased. The legislation prohibited all recreational use, including but not limited to campfires and use by equestrians, hikers, bikers, campers, hunters, and off highway vehicular riders. The closure of this “buffer” area dramatically reduced the risk of human-caused fire in the Little Sandy and the adjacent Bull Run main watershed.

It also greatly reduced potential for illegal entry into the main Bull Run watershed, substantially decreasing the potential for delivery of *C. hominis* to the drinking water supply.

Thank you for consideration of our comments. Today you have an historic opportunity to restore rationality to public health decisions and responsibility to our fiscal management. We strongly support a ten year variance for the City of Portland. We strongly request modifications to proposed conditions (as stated above) in recognition of the fact that the Bull Run is the most highly protected watershed in the nation and, as such, is at very low or no risk for contamination by human-infectious *Cryptosporidium* and other diseases and pollutants transmitted by humans and animals.

We strongly recommend that the OHA and the EPA focus agency expertise and precious, limited public resources on the safety of water found in unprotected, polluted, high-risk and medium-risk areas in Oregon, Region 10 and around the country.<sup>23</sup>

Sincerely,

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<sup>23</sup> CDC Morbidity and Mortality Weekly Report Surveillance Summaries  
Vol. 60 No. 12 September 23, 2011  
<http://www.cdc.gov/mmwr/pdf/ss/ss6012.pdf>

Regna Merritt and Theodora Tsongas, PhD for Oregon Physicians for Social Responsibility

Floy Jones for Friends of the Reservoirs

Kent Craford for Portland Water Users Coalition Members:

ALSCO, American Linen Division  
American Property Management  
Ashland Hercules Water Technologies  
The Benson Hotel  
BOMA Portland  
Darigold  
Harsch Investment  
The Hilton Portland and Executive Tower  
Mt. Hood Solutions  
New System Laundry  
Portland Bottling  
SAPA Inc.  
Siltronic Corp.  
Sunshine Dairy Foods  
Vigor Industrial  
Widmer Brothers Brewing  
YoCream

Scott Shlaes for Oregon Wild

Bob Sallinger for Audubon Society of Portland

Alex P. Brown for BARK

Franklin Gearhart for Citizens Interested in Bull Run, Inc.

Ron Carley for Coalition for A Livable Future

Julia DeGraw for Food & Water Watch

David Delk for Alliance for Democracy

David Lorati for Central Eastside Industrial Council

Peter Stark for Hillside Neighborhood Association

Jeffrey Boly for Arlington Neighborhood Association

Stephanie Stewart for Mt. Tabor Neighborhood Association - Land Use Committee

Anne Dufay for SE Uplift Neighborhood Coalition for:

North Tabor Neighborhood Association

Mount Tabor Neighborhood Association

Montavilla Neighborhood Association

Sunnyside Neighborhood Association

Buckman Neighborhood Association

Hosford Abernathy Neighborhood Association

Richmond Neighborhood Association

South Tabor Neighborhood Association

Foster Powell Neighborhood Association

Creston - Kenilworth Neighborhood Association

Brooklyn Neighborhood Association

Reed Neighborhood Association

Eastmoreland Neighborhood Association

Sellwood Moreland Neighborhood Association

Woodstock Neighborhood Association

Mount Scott Arleta Neighborhood Association

Brentwood Darlington Neighborhood Association

Ardenwald - Johnson Creek Neighborhood Association

Kerns Neighborhood Association

Laurelhurst Neighborhood Association

Rod Daggett and Maxine Wilkins for Eastside Democratic Club

## Appendix A

### PWB Public Health Expert Consensus Statement

On March 25, 2011, several public health experts <sup>24</sup> participated in a workshop at the Portland Water Bureau. The purpose of the workshop was for the invited experts to formulate an opinion on the soundness of PWB's decision to seek a variance to the LT2 rule from a public health perspective. <sup>25</sup> The panel discussed the data presented and asked questions of the PWB staff. After the workshop, eight consensus findings were developed by the panel based on the data presented.

1. Infectious disease surveillance in Multnomah County is excellent, at the top end of surveillance systems in the United States.
2. Availability of public health data is very good; it is comprehensive and targets sensitive population groups, such as persons with HIV/AIDS.
3. Based on the data presented, it appears that the majority of the reported cases of cryptosporidiosis in Multnomah County are sporadic in nature.
4. Based on the site-specific data for Multnomah County, there was no information which would suggest that drinking water has been a source of cryptosporidiosis. Reported rates of cryptosporidiosis are comparable to those seen elsewhere.
5. The Bull Run watershed is unique among watersheds. It is well-protected in ways that surpass that of other watersheds in the United States known to the panel, including those for other unfiltered utilities. Since human activity is highly restricted in the Bull Run watershed, it is most likely that any *Cryptosporidium* within the watershed is normally of animal origin.
6. The data collection effort the Water Bureau has undertaken for characterizing the amount of *Cryptosporidium* in the Bull Run watershed has been

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<sup>24</sup> *Panel:*

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Scott Meschke PhD Microbiology University of Washington

David Spath PhD Civil and Environmental Engineering Consultant, formerly of California Department of Health Services

Thomas Ward MD Oregon Health and Science University

Marylynn Yates PhD Microbiology University of California Riverside

*Panel Resources:*

Gary Oxman, MD Tri-County Health Officer (Multnomah, Clackamas, and Washington counties)

Amy D. Sullivan, PhD, MPH Communicable Disease Services Program Manager, MCHD

<sup>25</sup> See PWB Variance Request June 6, 2011 Section 5, p. 5-9



extremely thorough.

7. Based on the data set the Portland Water Bureau has gathered, the probability of exposure to *Cryptosporidium* via consuming Bull Run water is expected to be low. In the absence of human intrusion into the Bull Run watershed, the probability of exposure to *C. hominis*, which is almost solely found in humans, would be even lower.
8. Adding additional water treatment to Bull Run is not likely to result in a measurable decrease in the occurrence of reported cases of cryptosporidiosis based on the current conditions characterized in the Bull Run.

## Appendix B

### American Water Works Association December 13, 2011<sup>26</sup>

#### *Monitoring indicates Crypto threat lower than thought*

At a stakeholder meeting Dec. 7 on the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2), the US Environmental Protection Agency presented preliminary data suggesting that *Cryptosporidium* is less prevalent in drinking water supplies than anticipated by the current rule.

The data come from the initial round of monitoring under LT2. The meeting was held to review LT2 monitoring requirements prior to the second round of monitoring required by LT2 and to evaluate the LT2 in the next Six-Year Review cycle.

**USEPA requested input from stakeholders** on one specific issue: requiring analytical method improvements that would increase average oocyst recovery by 20 percent—from 40 percent to 60 percent. Based on source water conditions, some samples would be much more significantly affected than others.

“Pursuing changes to LT2ESWTR construct is akin to pulling a thread on a sweater in that changing one aspect of the rule rapidly impacts other elements of the rule construct in a cascade of interwoven dependencies,” said Alan Roberson, AWWA director of regulatory relations. “For example, the change in the analytical method offered by EPA could result in an increased likelihood a water system would be required to install treatment based on the second round of monitoring and thus raise the question of whether bin boundaries [i.e., thresholds for additional treatment] should be shifted.”

USEPA presented preliminary, summary statistics from the LT2 first-round monitoring, most significantly:

- More water treatment plants had all non-detects than anticipated, with 51 percent of water treatment plants (WTPs) reporting no detection.
- The average concentration of oocysts was 0.016 rather than 0.053 oocysts/L as anticipated.

Additional data show

- There were more non-detects and conversely fewer detects than anticipated (93 percent of samples were non-detects).
- Fewer source waters than anticipated had mean concentrations greater than 0.075 oocysts/L — meaning that no additional treatment is required.
- As system size decreased, smaller systems were more likely to observe oocyst levels greater

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<sup>26</sup> American Water Works Association, Streamline,  
Volume 3, Number 28 December 13, 2011

than 0.075 oocysts/L.

**One agency conclusion** is that the lower level of observed occurrence appears to be real and not due to a systematic change in recovery. The agency has not decided how it will determine whether any changes are needed in the rule.

During the stakeholder meeting, USEPA pointed out several aspects of LT2ESWTR requirements:

- The current LT2ESWTR second round monitoring requirements do not provide for submittal of grandfathered data.
- The current LT2ESWTR treatment requirements do not specifically address what a system will have to do if Round 2 monitoring finds a lower level of *Cryptosporidium* oocysts in a water treatment plant's source water that would place a water treatment plant in a lower treatment regimen.

AWWA and other stakeholders brought up important concerns to be addressed:

- Consider either dropping Round 2 monitoring or modifying the monitoring in a way that provides more value to water systems and informs health risk reduction.
- Identify opportunities to reduce costs where possible.
- Genotype positive samples, which would be informative.
- Consider improved accuracy of the analytical method and the implications for treatment requirements, if USEPA is going to pursue improved oocyst recovery.

**USEPA intends to release a redacted dataset** from the Round 1 monitoring, but officials did not say when it will be released and what data will be withheld.

"AWWA will need to elicit additional discussion of LT2 Round 1 data analysis," said Roberson.

The agency anticipates a meeting in the spring of 2012 to discuss uncovered finished water storage and other LT2ESWTR topics.

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## Appendix C

High impacts from rate increases associated with unnecessary LT2 project(s) and/or onerous monitoring conditions in Portland will harm vulnerable populations

The LT2 regulation has already exacerbated existing impacts and created new impacts on vulnerable populations such as low-income or minority populations, children and the elderly. It has forced rate increases to pay millions of dollars for the design of a Bull Run treatment plant that we believe to be unnecessary.

A May 10, 2011 radio report by Joe Meyers illustrated the heavy impacts of potential doubling in water bills (including revenue to pay for construction and operation of a treatment plant for Bull Run source water and/or onerous monitoring conditions):

***An increase in utility rates leads to a reduction in services for low income citizens.***

Examples:

**Dave Coffman: Sisters of the Road**, Financial Manager

This organization runs a kitchen and has relatively high water use. Dave calculated that the projected increase in water rates would cost Sisters of the Road an additional \$4-5,000 per year, the equivalent of serving 50 meals per month to folks in need.

[Sisters Of The Road is about building community and creating systemic solutions to homelessness and poverty. Sisters Of The Road, Inc. was incorporated in 1979 as a nonprofit restaurant in Portland, Oregon, open to the public and providing nourishing meals at little or no cost or in exchange for labor. Program services include the Cafe, Systemic Change, and Workforce Development.]

**Dianne Quast: Portland Housing Authority**, Director of Real Estate Operations

“For our rental properties, (except for two) the Housing Authority directly pays both the water and sewer bills. At same time, we have caps on what we can increase rents to for most of our properties. So the result is going to be that we are going to see a reduction in other services, in capital improvements, and general maintenance to absorb the additional costs for utilities. And so it’s a huge hit.

We are a housing authority that houses people who are low income. That means that many of the people who come into our housing have an annual income of \$17,000 or less. They are people who don’t have a lot of discretionary money for spending. We try to provide them with decent and safe and affordable housing. So when these kinds of increases hit, it just makes our job that much more challenging.”

