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By email: [Jennifer.I.Moulton@Ontario.ca](mailto:Jennifer.I.Moulton@Ontario.ca)

RE: EBR 013-1839 - Amendments to O.Reg. 287/07 "General" under the Clean Water Act, 2006  
EBR 013-1840 - Establishment of a regulation under the Safe Drinking Water Act, 2002

Dear Ms. Moulton:

Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization acting as a voice for several stewardships, associations, private and First Nation citizens, who have come together to protect, conserve and restore riverine ecosystems.

ORA has reviewed the proposed amendments, and offers the following comments and recommendations:

**EBR 013-1839:**

**A. Minor Amendment Provisions**

ORA supports the proposed minor amendment provisions to section 51(1) and 51(2) of regulation 287/07 in their entirety.

These minor amendments will allow decommissioned intakes, or intakes no longer operating in intake protection zones or wellhead protection areas, to be removed from or amended in the source protection plan. Thus, source protection plans and assessment reports can easily and efficiently be kept up to date.

**B. Continuous Improvement: hydrocarbon pipelines**

ORA also supports the proposed amendments to Subsection 1.1(1) of O. Reg. 287/07 where it lists the activities that are prescribed for the purpose of the definition of "drinking water threat" in subsection 2(1) of the Clean Water Act.

Adding the establishment and operation of a liquid hydrocarbon pipeline to the list of drinking water threats is very important and appropriate. Pipeline leaks can have devastating effects on



communities when drinking water quality is impacted, and these effects can persist for many months, and even years.

Further, the ORA supports the proposed changes to the Tables of Drinking Water Threats Established under the Technical Rules – December 2017 document; however, in ORA's experience as an Intervenor in the Energy East Pipeline Application, supporting documentation filed by the proponent described the existing natural gas pipeline at some in-water locations as being unsupported and unstable, and had already caused the pipeline to migrate downstream.

ORA would like to point out that the proposed list does not address an in-water pipeline scenario, it only addresses pipelines above, below and under a water body. Therefore, it is extremely important that the following be added:

**Recommendation 1:**

1. d. Pipelines within a water body.
2. b. (iv) Pipelines within a water body – The conveyance of a liquid hydrocarbon by way of a pipeline where the pipeline is crossing within a water body.
- c. (iv) Pipelines within a water body – intake protection zones scoring 10 and wellhead protection areas scoring 10.

**Additional threats to be added to the Tables of Drinking Water Threats:**

Algae and Cyanobacteria (blue-green algae) are photosynthetic organisms that thrive and multiply in conditions of sufficient sunlight, nutrients, and appropriate water temperatures. Such conditions are exacerbated by the building of dams and the regulation of rivers, creating a more suitable habitat for these organisms when nutrients are trapped and retained in impoundments, and/or flows are impeded.<sup>1,2</sup>

Overproduction of algae (including blue-greens) leads to blooms which, at the very least, impair aesthetics, taste and odour of water, and at worst, can threaten the health of humans and wildlife. Reservoirs silting up or becoming overloaded with nutrients are common problems with major reservoirs and could be at least as serious where smaller and shallower bodies of water are created — the shallower a water-body, the more easily eutrophic it can become.<sup>3</sup>

Significant health risks can occur with cyanobacteria, for instance the

*World Health Organization (WHO) considers freshwater contamination by cyanobacteria, and the toxins they produce, to be a major worldwide threat that can limit utilization of water resources. It's important to remember that the building of dams and regulation of rivers has created more habitats suitable for cyanobacteria. The general opinion now is that "cyanobacterial blooms" are increasing in frequency worldwide. Exposure to hepatotoxins (microcystins, nodularins and cylindrospermopsins) has been reported to induce several health disorders depending on the route of exposure, the quantities absorbed and the toxicity of the cyanobacterial strain. Harmfulness ranges from minor disorders (headaches, nausea, diarrheas) to lethal deterioration of hepatic functions. It is also thought that chronic exposure to low concentrations can promote liver cancer. In 1996, 60 patients died in Brazil after haemodialysis with contaminated water.<sup>4,5</sup>*

Many Ontario rivers are a source of drinking water for private homeowners, as well as for municipal and First Nation communities. Ingesting blue-green algae toxins can result in acute gastroenteritis,



liver and kidney toxicity and even death in humans<sup>6,7</sup>, pets, livestock and wildlife.<sup>8</sup> Children are at greater risk than adults of developing serious liver damage should they ingest or be exposed to high levels of toxins because of their comparatively lower body weight.<sup>9</sup>

While blue-greens may not be a factor at all waterpower facilities, most do rely on impoundments to optimize power generation. Therefore, the risk of Cyanobacteria blooms should be carefully considered as a potential impact at all proposed waterpower facilities. It should also be given full consideration in environmental reports and reviews. At present, the cumulative effects of this and other uses within the watershed are seldom adequately considered in the approval of waterpower facilities in Ontario.

### **Recommendation 2:**

ORA recommends that hydroelectric facilities utilizing headponds/impoundments be included in the Tables of Drinking Water Threats, at the highest intake protection score of 10.

### **EBR 013-1840:**

#### **C. Safe Drinking Water Act Regulation**

ORA also supports the development of a regulation under the Safe Drinking Water Act, 2002, to add an additional level of assurance that drinking water is being protected at the source, and to ensure source protection plan policies can be put into place for new or expanded drinking water systems prior to drinking water being provided.

We understand that this regulation under subsection 168(2) of the Safe Drinking Water Act would ensure that an alteration, relocation or addition of a surface water intake or wells drinking water works permit:

- An alteration cannot be made to a municipal drinking water system unless it is authorized by the drinking water works permit for that system.
- Municipal council resolutions are in place for all affected municipalities, endorsing the delineated vulnerable areas and proposed source protection plan policies, prior to an application being made under the Safe Drinking Water Act.

ORA is grateful for this opportunity to comment!

Respectfully,

Linda Heron  
Chair, Ontario Rivers Alliance  
(705) 866-1677

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<sup>1</sup> *Cecchi, P., Arfi, R., Berger, C., Coute, A., Gugger, M., and Zongo, F. Cyanobacteria, cyanotoxins and potential health hazards in small tropical reservoirs. 12 pp. Online: [http://www.smallreservoirs.org/full/toolkit/docs/III%2006%20Cyanobacteria\\_ML.pdf](http://www.smallreservoirs.org/full/toolkit/docs/III%2006%20Cyanobacteria_ML.pdf)*



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- <sup>2</sup> Winter, J.G. and H.C. Duthie. 1998. *Effects of urbanization on water quality, periphyton and invertebrate communities in a southern Ontario stream.* *Canadian Water Resources Journal* Vol. 23(3): 245-247
- <sup>3</sup> Abbasi, T. and Abbasi, S.A. 2011a. *Small hydro and the environmental implications of its extensive utilization.* *Renewable and Sustainable Energy Reviews*, 15: 2134-2143.
- <sup>4</sup> Cecchi, P., Arfi, R., Berger, C., Coute, A., Gugger, M., and Zongo, F. *Cyanobacteria, cyanotoxins and potential health hazards in small tropical reservoirs, 12 pp.* Online: [http://www.smallreservoirs.org/full/toolkit/docs/III%2006%20Cyanobacteria\\_ML.pdf](http://www.smallreservoirs.org/full/toolkit/docs/III%2006%20Cyanobacteria_ML.pdf)
- <sup>5</sup> Pouria et al. 1998. *Fatal microcystin intoxication in haemodialysis unit in Caruaru, Brazil.* *The Lancet*. 352: 21-26.
- <sup>6</sup> Teixeira, M.G.L.C., Costa, M.C.N., Carvalho, V.L.P., Pereira, M.S. and Hage, E. 1993. *Bulletin of the Pan American Health Organization*. 27: 244-253.
- <sup>7</sup> WHO. 1999. *Toxic Cyanobacteria in Water: A guide to their public health consequences, monitoring and management.* Edited by Ingrid Chorus and Jamie Bartram © 1999 WHO. C-4, P-3. Online: [http://www.who.int/water\\_sanitation\\_health/resourcesquality/toxcyanbegin.pdf](http://www.who.int/water_sanitation_health/resourcesquality/toxcyanbegin.pdf)
- <sup>8</sup> Huynh, M. and N. Serediak. 2006. *Algae Identification Field Guide.* Agriculture and Agri-Food Canada. 40 pp. P -9. Online: [http://publications.gc.ca/collections/collection\\_2011/agr/A125-8-2-2011-eng.pdf](http://publications.gc.ca/collections/collection_2011/agr/A125-8-2-2011-eng.pdf)
- <sup>8</sup> Health Canada, 2013. *Environmental and Workplace Health, Blue-Green Algae (Cyanobacteria) and their Toxins.* Online: <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/cyanobacter-eng.php>
- <sup>9</sup> Health Canada 2013. *Environmental and Workplace Health, Blue-Green Algae...* (See Ref. 59).