



June 22, 2012

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**VIA U.S. MAIL**

Ms. Nancy Stoner, Acting Assistant Administrator  
c/o Water Docket  
U.S. Environmental Protection Agency  
Mailcode: 2822T  
1200 Pennsylvania Ave., NW  
Washington, D.C. 20460

**Advisory Council**

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***Re: Fourth Contaminant Candidate List Nominations  
Docket ID No. EPA-HQ-OW-2012-0217***

Dear Ms. Stoner:

We urge you to list **Bisphenol A (BPA) (CAS # 80-05-7)** on the Fourth Contaminant Candidate List, based on its known adverse health effects and the likelihood that BPA is present in public water systems.

Pursuant to the Safe Drinking Water Act Amendments of 1996 (SDWA), the U.S. Environmental Protection Agency (EPA) must compile a list of unregulated contaminants that are known or anticipated to occur in public water systems and may require regulation under the SDWA. EPA then must make a decision about whether or not to regulate a least five of the contaminants on the list. EPA recently issued a notice and request for nomination of chemical and microbial contaminants for possible inclusion in the fourth drinking water Contaminant Candidate List (CCL 4).<sup>1</sup> Under existing guidelines,<sup>2</sup> EPA selects contaminants for a CCL based on a scoring system that addresses two primary factors: health effects and occurrence in water supplies. BPA received a low score on this scale during deliberations on the CCL3 and was not included on that list.<sup>3</sup> We believe that new information published since the CCL3 deliberations will change BPA's score. It deserves your close attention, and BPA should be added to the CCL 4.



## Health Effects

Factors that make this contaminant a priority for the CCL 4 process include its potentially harmful effects to susceptible populations (particularly children, fetuses, and pregnant women), and the potential contamination of both source and finished water.

While many of the health effects of BPA have been documented in the previous CCL submissions and documents,<sup>4</sup> new information on the adverse health effects of BPA has continued to mount since EPA's decision to not regulate BPA. To name a few, scientific studies in just the past year have demonstrated BPA's ability to produce transgenerational changes in behaviors and gene expression through gestational exposure,<sup>5</sup> BPA's association with increased insulin resistance and obesity,<sup>6</sup> BPA's potential to alter memory functions,<sup>7</sup> and BPA's links to breast cancer through fetal exposure.<sup>8</sup>

***EPA's previous Health Reference Level (HRL) in assessing BPA's CCL 3 score was based on the inadequate IRIS value, which fails to account for BPA's low-dose health effects.***

All of these new studies and the many preceding them demonstrate significant health risks that have come to light since EPA's CCL 3 determinations. Moreover, EPA used a flawed health reference level in the past, and the new studies demonstrate BPA's adverse health effects at levels far below traditional risk assessment values. BPA, along with other endocrine-disrupting chemicals (EDCs), causes adverse health effects at doses far below those previously thought to be safe. One recent study, involving a review of recent scientific on BPA and other endocrine-disrupting chemicals, concluded "evidence that low-dose effects are common in EDC research and may be the default expectation for all chemicals with endocrine activity."<sup>9</sup> In this study, researchers included a detailed review of BPA studies demonstrating adverse prostate and mammary gland development at low doses, some as low as 10  $\mu$  g/kg/day.<sup>10</sup> This study also notes the potential long-term exposure and health risks of "large amounts of plastic waste leaching BPA (and other estrogenic compounds) from landfills into water sources."<sup>11</sup> Ultimately, researchers identify a number of necessary reforms needed to improve current regulatory health assessment methodologies of EDCs, including BPA, and further recommend "a greatly expanded and generalized safety testing and surveillance to detect potential adverse effects of this broad class of chemicals."<sup>12</sup>

**Consequently, these low-dose health effects are not properly accounted for in current risk assessments of BPA and CCL evaluations.** EPA's IRIS reference dose value of 50  $\mu$  g/kg/day should not be used to determine BPA's HRL. Instead, EPA needs to establish a meaningful HRL and reference dose that accounts for the recent data on low-dose health effects.

## Occurrence Data

Studies also confirm that BPA is present in drinking water supplies. In raw, untreated, drinking water samples taken from 74 sources in 25 states and Puerto Rico, the U.S. Geological Survey (USGS) found BPA at levels of 1  $\mu$  g/L in 9.5 % of samples tested and as high as 1.9  $\mu$  g/L.<sup>13</sup> These numbers coincide with the occurrence data that EPA selected as most relevant for the CCL 3 determination and raise significant concerns with regard to low-dose health effects.

## Conclusion

Based on the studies identified here, previous research, and additional reasons explained, CPR nominates BPA for EPA's CCL 4.

Sincerely,



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<sup>1</sup> Request for Nominations of Drinking Water Contaminants for the Fourth Contaminant Candidate List, 77 Fed. Reg. 27057 (May 8, 2012), *available at* <https://www.federalregister.gov/articles/2012/05/08/2012-11048/request-for-nominations-of-drinking-water-contaminants-for-the-fourth-contaminant-candidate-list#p-3>.

<sup>2</sup> See U.S. ENVT'L PROT. AGENCY, *Final Contaminant Candidate List 3 Chemicals: Screening to a PCCL*, [http://water.epa.gov/scitech/drinkingwater/dws/ccl/upload/CCL3Chem\\_Screening\\_to\\_PCCL\\_08-31-09\\_508v2.pdf](http://water.epa.gov/scitech/drinkingwater/dws/ccl/upload/CCL3Chem_Screening_to_PCCL_08-31-09_508v2.pdf); U.S. Env't Prot. Agency, *Final Contaminant Candidate List 3 Chemicals: Classification of the PCCL to CCL*, [http://www.epa.gov/ogwdw/ccl/pdfs/ccl3\\_docs/CCL3\\_PCCLtoCCL\\_08-31-09\\_508.pdf](http://www.epa.gov/ogwdw/ccl/pdfs/ccl3_docs/CCL3_PCCLtoCCL_08-31-09_508.pdf).

<sup>3</sup> U.S. ENVT'L PROT. AGENCY, *Final Comment Response Document for the Third Drinking Water Contaminant Candidate List (Categorized Public Comments) (EPA-HQ-OW-2007-1189-0188)*, *available at* <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OW-2007-1189-0188>.

<sup>4</sup> See Mae Wu, *NRDC Comments on the Draft Drinking Water Contaminant Candidate List 3, Docket Number: EPA-HQ-OW-2007-1189*, May 21, 2008, *available at* <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OW-2007-1189-0125>.

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- <sup>5</sup> Jennifer T. Wolstenholme, Michelle Edwards, Savera R. J. Shetty, Jessica D. Gatewood, Julia A. Taylor, Emilie F. Rissman and Jessica J. Connelly, *Gestational Exposure to Bisphenol A Produces Transgenerational Changes in Behaviors and Gene Expression*, ENDOCRINOLOGY, June 15, 2012 en.20121195.
- <sup>6</sup> Tiange Wang\*, Mian Li\*, Bing Chen, Min Xu, Yu Xu, Yun Huang, Jieli Lu, Yuhong Chen, Weiqing Wang, Xiaoying Li, Yu Liu, Yufang Bi, Shenghan Lai and Guang Ning, *Urinary Bisphenol A (BPA) Concentration Associates with Obesity and Insulin Resistance*, THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM, February 1, 2012, vol. 97 no. 2 E223E227.
- <sup>7</sup> EilamStock, T, P Serrano, M Frankfurt and V Luine, 2011, *Bisphenol A Impairs Memory and Reduces Dendritic Spine Density in Adult Male Rats*, BEHAVIORAL NEUROSCIENCE, 2011, <http://dx.doi.org/10.1037/a0025959>.
- <sup>8</sup> Andrew P. Tharpa,<sup>1</sup> Maricel V. Maffinia,<sup>1</sup> Patricia A. Huntb, Catherine A. VandeVoortc, Carlos Sonnenscheina, and Ana M. Sotoa, *Bisphenol A alters the development of the rhesus monkey mammary gland*, PNAS, May 7, 2012, doi: 10.1073/pnas.1120488109.
- <sup>9</sup> Laura N. Vandenberg, Theo Colborn, Tyrone B. Hayes, Jerrold J. Heindel, David R. Jacobs, Jr., Duk-Hee Lee, Toshi Shioda, Ana M. Soto, Frederick S. vom Saal, Wade V. Welshons, R. Thomas Zoeller, and John Peterson Myers, *Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses*, ENDOCRINE REVIEWS, March 14, 2012 er.2011-1050, at 27.
- <sup>10</sup> *Id.* at 17-20.
- <sup>11</sup> *Id.* at 49.
- <sup>12</sup> *Id.* at 49.
- <sup>13</sup> See Barnes, K.K., Kolpin, D.W., Furlong, E.T., Zaugg, S.D., Meyer, M.T., and Barber, L.B. 2008, *A national reconnaissance of pharmaceuticals and other organic wastewater contaminants in the United States—I) Groundwater*, SCIENCE OF THE TOTAL ENVIRONMENT, v. 402, no. 2–3, p. 192–200 and Focazio, M.J., Kolpin, D.W., Barnes, K.K., Furlong, E.T., Meyer, M.T., Zaugg, S.D., Barber, L.B., and Thurman, E.M. 2008, *A national reconnaissance for pharmaceuticals and other organic wastewater contaminants in the United States—II) Untreated drinking water sources*, SCIENCE OF THE TOTAL ENVIRONMENT, v. 402, no. 2–3, p. 201–216.