Denevan, Aubri

From: Keri Hornbuckle <kchorn@engineering.uiowa.edu>
Sent: Wednesday, January 29, 2014 1:43 PM
To: Borgias, Adriane P. (ECY)
Subject: Re: PCBs in consumer products and building materials

Thank you Adriane,

The letter of support will be included in our proposal to continue our center. Our proposal is due at the end of February and so I need the letter shortly after your meeting on the 26th.

The letter should be addressed to the center director:

Professor Larry Robertson
Director of the Iowa Superfund Research Program
University of Iowa
Iowa City, Iowa

A scanned signed copy is fine. Please email it to me.

I suggest language something like what follows. Please send me the draft prior to distribution.

Dear Dr. Robertson,

The Spokane River Regional Toxics Task Force (SRRTTF) is eager to support the Iowa Superfund Research Program's application for renewal.

The SRRTTF addresses PCBs and related compounds found in the waters and surrounding environment of the Spokane River. We are interested in all sources of these compounds to our watershed. PCBs are of major concern because of measurements of PCBs in our water and fish that indicate higher than acceptable levels and a potential for adverse health effects. We have had the pleasure of meeting several ISRP researchers, including Dr. Andres Martinez and Dr. Dingfei Hu. Drs. Martinez and Hu have provided some advice and assistance regarding non-Aroclor PCBs and the relative importance of PCB sources from atmospheric deposition, paint manufacturing, and solid waste disposal.

We hope for this exchange of ideas and advice to continue. We appreciate the offer from the Director of the ISRP Analytical Core, Dr. Keri Hornbuckle, to analyze occasional samples from our watershed using the methods her group has developed for non-Aroclor and congener-specific PCBs. ... We hope that personnel from the ISRP, including those with expertise on PCB sources, exposures, and toxicity, will be able to provide us with technical advice.

...

Yours truly,

specific names and titles will be helpful here.

Keri

On 1/29/2014 11:22 AM, Borgias, Adriane P. (ECY) wrote:

Dear Keri,

Great talking with you today!

Here is a link to our website: http://srrttf.org

The MOA, that describes the vision, purpose, tasks to be accomplished is here: http://srrttf.org/wp-content/uploads/2012/07/SRRTTF-MOA-Final-1-23-2012.pdf

The Task Force Signatories are on this page: http://srrttf.org/?p=756

The technical work that we are doing is here (this needs to be updated): http://srrttf.org/?page_id=1632

And lastly, here is some information about the City of Spokane's grant to evaluate products. Lynn Schmidt is the contact for that: http://srrttf.org/?p=2195

We are very interested in your project and I am quite sure the Task Force will support it. Please send me the background information you think is helpful in preparing the letter.

As far as a Letter of support, the process is this:

1) Someone (probably me) prepares a draft letter of support for SRRTTF comment. Since this is on a short timeframe, I can vet it with the voting members before the meeting.
2) A draft version of the support letter is posted to the website one week in advance of the meeting (February 19).
3) A consensus decision is made at the meeting (February 26).
4) Once approved, the letter signed by a representative of the TF and sent to you. (Electronic ok, or do you need a hard copy?)

I will be in the office this week and next and available by email only February 11 – March 3.

Thank you for your interest in our work. Dr. Martinez and Dingfei Hu have been extremely helpful for to us.

Sincerely,

Adriane Borgias

Spokane River Water Quality Lead
Washington State Department of Ecology
Water Quality Program - Eastern Regional Office
4601 North Monroe Street
Spokane, WA 99205-1295
(509) 329-3515

This communication is public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

From: Keri Hornbuckle [mailto:kchorn@engineering.uiowa.edu]
Sent: Wednesday, January 29, 2014 6:42 AM
To: Borgias, Adriane P. (ECY)
Subject: PCBs in consumer products and building materials

Dear Adriane,

Dingfei forwarded your email to me. I am the project leader of the study that Dingfei was funded on. He has now moved on to a consulting position but our work with non-Aroclor PCBs remains here at Iowa.

We are a large research center funded by the NIH to investigate sources of PCB congeners http://iowasuperfund.uiowa.edu/). I lead the Analytical Core and Project 4 of the center. One aspect of our study concerns PCBs in building materials, including paint. We are currently writing our competitive renewal and I am considering a expanding our studies associated with manufacturing processes that produce PCBs in common household produces and building materials.

If you are interested, our center could provide analysis of congener specific PCBs in building materials and consumer products of interest to you. We could do this for no cost. Please give me a call if I can help.

Keri

--
Keri C. Hornbuckle, Ph.D.
Professor, Department of Civil & Environmental Engineering
Associate Dean for Academic Programs
College of Engineering
3100 SC
University of Iowa
Iowa City, Iowa USA 52242

FAX (319) 335-5660
Phone: (319) 335-5148
http://www.engineering.uiowa.edu/hornbuckle

-------- Original Message --------

Subject: Fwd: Saving the Spokane
Date: Tue, 28 Jan 2014 18:57:33 -0500
From: Dingfei Hu <yongk980@gmail.com>
To: Keri Hornbuckle <kchorn@ENGINEERING.UIOWA.EDU>

Hi Keri,

FYI:Interesting Question and Answer below.

Best Regards,

Dingfei

---------- Forwarded message ----------
From: **Borgias, Adriane P. (ECY)** <ABOR461@ecy.wa.gov>
Date: Tue, Jan 28, 2014 at 6:36 PM
Subject: RE: Saving the Spokane
To: Amanda Thomson <a_l_thomson@msn.com>
Cc: "Moss, David" <DMoss@spokanecounty.org>, "darnold@spokanecity.org" <darnold@spokanecity.org>, "Lynn Schmidt (lschmidt@spokanecity.org)" <lschmidt@spokanecity.org>, "rodenburg@envsci.rutgers.edu" <rodenburg@envsci.rutgers.edu>, "dougkrapas@iepco.com" <dougkrapas@iepco.com>, "dingfei-hu@uiowa.edu" <dingfei-hu@uiowa.edu>, "Eaton, Thomas" <Eaton.Thomas@epa.gov>, "Gimlin, Peter" <Gimlin.Peter@epa.gov>, "abeall@wsu.edu" <abeall@wsu.edu>, "Page, Chris" <c.page@wsu.edu>, "Stone, Alex (ECY)" <ALST461@ecy.wa.gov>

Amanda,

You have asked some fundamental questions, and ones that we would like the answer to as well!

Here is what I know off the top of my head:

- PCBs in pharmaceuticals: have not heard that allegation yet. I am hesitant to confirm or deny that is the case without a scientific study or quality assured laboratory analysis. The Food and Drug Administration would regulate that. They do have standards for PCB in packaging of pharmaceuticals.

- PCBs in household cleaners: potentially true. Again, I am hesitant to confirm or deny that is the case without a scientific study or quality assured laboratory analysis.

- Have looked for studies on these items but haven't found anything comprehensive. The Environmental Working Group may have some data. This is a worthy area of inquiry, especially if you are able to find some reliable publications on the topic.

- All of the municipal waste dischargers have in place plans to review what is coming into their systems from homes, etc. and identify where the PCB is coming from. You could, for example contact Dave Moss at the County (copied on the message) to give you an idea of what they are doing from a treatment plant perspective to understand what is going down the drain.

- Inclusive list of all things PCB: No there is no such thing. In 1982 the EPA issued a report stating that there are more than 200 chemical processes that could generate PCB as by-product. That was whittled down to a list of 77. I have yet to find the report, just a one page summary. But the list is just processes and not what products are produced nor where they go in the consumer supply chain. The challenge is how to evaluate what is in consumer products in what is a changing market. New products come and go. Analyzing products for trace quantities of PCB is very expensive ($1000/sample), so we have to be strategic in how this is done. This again is an area of inquiry, how to identify, trace, track, prioritize, evaluate, consumer products for PCB; how to educate and create a market based system to remove them from use. We do know PCB can be found in: motor oil (as a contaminant); paints (the pigment);

printed materials (paper, textiles, etc.); plastics. In addition to the traditional uses still in place as electrical dielectric fluid (these are contained uses, but could be spilled). City of Spokane (Lynn Schmidt and Dale Arnold) is doing some work in product analysis.

- PCB free inks and dyes: PCB can be found in diaryl pigments (yellow, orange, red) used in printing inks (paper, textiles) and sometimes colorant in plastics (bags, etc.) . There is data on this (contact Lisa Rodenburg at Rutgers) . A study by Prof. Christie indicates that there is no current substitute for these due to their inherent properties and use in printing (dyes are different substances, by the way). So this would definitely be an opportunity for further study. Go to the American Chemical Society and look at their Green Chemistry Principles/Green Chemistry Engineering Principles to see if this is an area of inquiry that you would be interested in.

- A transition to the PCB free versions of diaryl pigments would most likely take time (research, testing, development, manufacture) but could be done if there were regulatory incentives (i.e., EPA regulations). Of course, this is another area of inquiry, the regulatory process, how it works, and what would it take to achieve this. A contact who is working on this aspect is Doug Krapas at Inland Empire Paper, also Peter Gimlin at EPA regarding the Toxic Substances Control Act and how it works.

- PCB can also be found in green and blue pigments, called phthalocyanines (they are chemically similar to the chlorophyll molecule). Professor Christie's paper indicates that there are substitutes for these and they are less likely to have PCB (but are stilled allowed to under the current regulations).

- A third pigment that can have PCB is titanium dioxide. The presence of PCB in this pigment depends on how it is manufactured. I have heard anecdotally that the current method of titanium dioxide manufacture both DOES and DOES NOT involve the creation of PCB. So, possibly a worthwhile investigation to find this out. Titanium dioxide is used as a colorant in many things (white), including paints, make up, sunscreen, etc. I haven't seen any analytical data on its presence in personal care products but Ding Fei Hu and Keri Hornbuckle at the University of Iowa published a paper about PCB in pigments in paint. Lisa Rodenburg may also have some data.

- PCB free alternatives: this is a worthy area of inquiry. What are the products used most prevalently in the area, what is the potential for PCB, and how would it get into the river? Where would our source reduction efforts have the most benefit? How would we educate the public and what information do we need to have? Are there market based approaches to eliminating the use of PCB in the watershed? Are there regulatory approaches? Perhaps there is a single product or alternative worthy of discussion. For example, motor oil, how much is used, how much is leaked, how would it get to the river (cars, boats, etc.). Is there an alternative (bio based?) and what is the impact on the recycling industry? Alex Stone at Department of Ecology may have some useful information along these lines.

- EPA contacts: Tom Eaton is our regional contact for the Task Force (Seattle), he can direct you to local resources. Peter Gimlin is EPA staff in Washington DC and is knowledgeable about recent EPA rulemakings and the topic of "inadvertently produced" PCB, which is how it gets into pigments, etc.

- Current budget: The estimated expenses over the next few years to study the river, identify sources and develop a comprehensive plan to remove them ranges from $400,000 – 1,500,000. We don't have all the funding in hand but we do have a $350,000 appropriated from the legislature to spend and have allocated most of that for answering some of the questions you have posed here, in addition to getting a better understanding of the river system. The Task Force as a whole is looking for funding to cover the balance. Some will come from the wastewater permit holders and some from EPA and some of the work we will need to prioritize, do later or not do at all. Implementing the actual source reductions aren't included in this budget. That would come from a variety of sources (stormwater management by the city, treatment technology upgrades by the wastewater plants, etc.) I haven't seen an estimate on that

aspect other than a recent report from HDR on the impact of stricter water quality standards on waste water treatment. That, of course, is another area worthy of inquiry, how to fund collaborative efforts such as this (private money, public/rate payer money, government grants) and where is the most effective place to spend the monetary resources (source reduction, elimination, end of pipe treatment, regulation)?

So, I have probably overwhelmed you at this point. For you to tackle all of these would be overwhelming. So pick a topic that is of the most interest to you and dig in!

I would be happy to discuss this with you or your team if you like, provide some references/links once you hone in on your project. I will be out of the office from February 10 until March 4 but will have limited access to email.

Adriane Borgias

Spokane River Water Quality Lead

Washington State Department of Ecology

Water Quality Program - Eastern Regional Office

4601 North Monroe Street

Spokane, WA 99205-1295

(509) 329-3515

This communication is public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

From: Amanda Thomson [mailto:a_l_thomson@msn.com]
Sent: Tuesday, January 28, 2014 2:26 PM
To: Borgias, Adriane P. (ECY)
Subject: Saving the Spokane

Adriane,

My name is Amanda and I am working on the Saving the Spokane project at WSU. My group has several questions that we hope you will be able to answer.

We had a meeting last week with Allyson Beall King. She said that there might be a connection between PCB's and Pharmaceuticals/household cleaners being put down the drain. Could you possibly elaborate on this? Have any studies been done on this?

Do you have an all inclusive list of things that contain PCB's/produce PCB's? Specifically to the Spokane region, if possible.

Do you know anything about PCB free inks and dyes? Would a transition to using them (versus using inks and dyes with PCB's) be costly?

Do you know of any other products that have a PCB free alternative?

Do you have a contact with the EPA that we can talk to regarding federal laws on PCB's? It would be preferable if the person is familiar with the region.

Lastly, what is the current budget for this project? Where is the money coming from and what is it suppose to be used for? Is the money earmarked for removing PCB's from the environment or for preventing PCB's from entering the environment in the first place?

Thank you for your time,

Amanda Thomson

--
Keri C. Hornbuckle, Ph.D.
Professor, Department of Civil & Environmental Engineering
Associate Dean for Academic Programs
College of Engineering
3100 SC
University of Iowa
Iowa City, Iowa USA 52242

FAX (319) 335-5660
Phone: (319) 335-5148
http://www.engineering.uiowa.edu/hornbuckle

--
Keri C. Hornbuckle, Ph.D.
Professor, Department of Civil & Environmental Engineering
Associate Dean for Academic Programs
College of Engineering
3100 SC
University of Iowa
Iowa City, Iowa USA 52242

FAX (319) 335-5660
Phone: (319) 335-5148
http://www.engineering.uiowa.edu/hornbuckle