

TSCA/iPCB/Green Chemistry Workgroup Meeting Summary January 6, 2021

TSCA Members in Attendance:

David Darling (ACA)	Cheryl Niemi (Ecology)
Jeff Donovan (City of Spokane)	Michael Ober (TDSC)
Ben Floyd (White Bluffs Consulting)	Mike Peterson (The Lands Council)
Lauren Heine (NW Green Chemistry)	Elsa Pond (WA DOT)
Gary Jones (Printing United Alliance)	Karl Rains (Ecology)
Doug Krapas (IEP)	Lisa Dally Wilson (Dally Environmental)
Robert Mott (Mott Consulting, LLC)	

Guests in Attendance:

George Fuchs (NAPCM)	Brian Owen (IEP)
Scott Fulbright (Living Ink)	Lisa Rodenburg (Rutgers)
Caroline Hammett (IEP)	Kyle Shimabuku (Gonzaga University)
Rob Lindsay (Spokane County)	Mark Vincent (CPMA)
Craig Manahan (Post Falls)	Bruce Williams (SRHD)

General:

I. Living Ink Presentation (09:30 to 10:00):

Reference: <http://srrttf.org/wp-content/uploads/2021/01/Living-Ink-Deck-iPCB-.pdf>

Scott Fullbright, the CEO and Co-Founder of Living Ink, received a graduate degree in molecular biology following undergraduate research in freshwater streams, fluvial systems, and algae blooms. After undergraduate studies, he was hired at a bioenergy company using algae as fuel.

- Company focus on providing an **alternative to Carbon Black**
 - o Problems with Carbon Black
 - Petroleum-based
 - Carbon footprint
 - Carcinogenic
 - Lack of innovation in industry for 100 years
 - o Living Ink uses **micro-algae** as feedstock to make its version of carbon black: **Algae Black™**
 - 100% renewable
 - Naturally small particle size
 - Negative carbon footprint because algae sequesters CO₂ which stays locked up in the pigment (25% atmospheric CO₂, 75% industrial CO₂)
 - Water-based
- Through a process similar to pyrolysis/carbonization, algae waste is turned into black pigment. The ink made from this pigment can be used for flexographic printing, offset printing, and screen printing.
 - o Applications: paper, packaging, vehicles, cosmetics, clothing

- There is a growing market for water-based inks, but it requires specific printing equipment. Additionally, water-based inks require additional drying time. A typical water-based ink dries in 45-50 seconds, while plastisol dries in 30 seconds.
- Development:
 - o The plan is to co-locate with algae farms and wastewater treatment facilities
 - o Colors: Living Ink has focused on black, but is working on green, yellow, purple, brown, and orange
 - Color fades faster with exposure to UV light
 - Goal: develop yellow, cyan, and magenta pigments
 - o The company is starting to become cost competitive
 - o The company is monitoring the potential presence of heavy metals that algae can adsorb
 - o Seeing more flexibility and interest from brands

II. Green Chemistry Workgroup

- a. The iPCB/TSCA workgroup members agreed that any future “Green Chemistry” related work be integrated into the scope of the iPCB/TSCA workgroup efforts since the evolution of the iPCB/TSCA workgroup has become synergistic with green chemistry objectives.
- b. Green Chemistry discussions are summarized in Agenda Item #9 below.

iPCB/TSCA Agenda Items Discussed:

1. **WA HHWQC Lawsuits: Action: D. Krapas and others (i.e.: Ecology) to provide any updates on the following lawsuits**
 - a. No new updates for either case, WA State vs. EPA and Puget Soundkeeper Alliance & Makah Indian Tribe vs. EPA. See *Previous Meeting Notes* below for current status:

Previous Meeting Notes:

- b. **WA State vs. EPA** -WA State filed a lawsuit in federal court challenging reconsideration and approval of state standards on 06/08/19
 - EPA moved for summary judgment in this case in June 2020
 - Motion has been fully briefed and waiting for a decision from the court
 - Washington State and two intervening tribes have files amended complaints to challenge the substantive decision by EPA to withdraw the federal HHC
 - Answers to the amended complaints are due 11/9/20
 - A joint status report was filed on 11/12/20 in which the parties agreed to file an additional proposed schedule for any additional briefing in the case. The State of Washington has not made a decision on this question but the two intervening tribes have agreed that they do not need additional briefing to resolve the claims in their amended complaints.

- c. **Puget Soundkeeper Alliance & Makah Indian Tribe vs. EPA** – Action filed on 6/11/20 challenging EPA to withdraw federal HHWQC
- Case assigned to same judge as 1.a. above
 - No further action has taken place in this case
 - An answer to the complaint by EPA was filed on 11/9/20
 - A joint status report was filed on 1/12/20, but there has been no agreement on a briefing schedule to resolve the matter. The plaintiffs are reviewing the Administrative Record before they agree to a briefing schedule. Joint status report is to be filed on 11/12/20

2. Update on PCB EPA Method 1668 study of TiO₂ Pigments: Action: J. West & M. Ober to continue providing updates on the TDSC project:

- a. M. Ober provided an update that all samples have been collected and submitted to the laboratory, and that laboratory testing of all samples is taking place concurrently. Preliminary data may be available for the February iPCB/TSCA and SRRTTF Meetings.

Previous Meeting Notes:

- b. The project has experienced multiple setbacks, including natural disasters (hurricanes) in the southern U.S., COVID delays and holidays. Sampling is expected to be completed by the end of next week (December 11, 2020). The TDSC remains optimistic that laboratory analysis will be completed in January, 2021 with a possible presentation to the SRRTTF at the February meeting (February 24, 2021).
- c. There are a total of four (4) facilities participating in the sampling: One has completed sampling, two are in process, and one was shut down due to a hurricane and is once again operational and has begun sampling.
- d. Approximately twelve to sixteen samples will be collected plus blanks
- e. All of the samples that are collected will be analyzed together to minimize the potential for background contamination and variability.
- f. SGS-AXYS in NC has estimated a 30 day turn around for analysis of all samples.
- g. Data analysis and the final report will be performed by Environmental Standards. They remain hopeful that a draft may be available for iPCB/TSCA workgroup review by the end of 2020.
- h. A final report will likely be available for the full SRRTTF during the spring of 2021.
- i. Training for sampling of the various TiO₂ pigments used in coatings, plastics and paper was completed in August and sampling is now dependent on manufacturer's availability.
- j. There were requests on the format for presenting the data (range of results vs. aggregate), but Michael cautioned that the data must be presented in a manner to protect the confidentiality and proprietary nature of the participating manufacturers.

3. Education/Outreach: Action: M. Peterson to provide updates on the Education & Outreach Workgroup efforts and The Lands Council's national outreach campaign to expand knowledge on the iPCB issue:

- a. Mike Peterson (The Lands Council) shared that E & O is working on its national campaign and has been navigating through an evolving scope. Research is ongoing into the Fish Advisories related to PCBs. E & O is focused on Spokane and the Roanoke River. The group is hoping for additional funding and is working towards a scope and budget for SRRTTF consideration at the January meeting.
- b. Gary Jones (Printing United Alliance) offered to work with E & O to correct misinformation and provide industry-side perspective and collaboratively participate in the process.
- c. Doug shared that the iPCB/TSCA Workgroup will continue to support the E & O activities as needed.

Previous Meeting Notes:

- d. The Education and Outreach (E & O) Workgroup is taking the outcomes from the iPCB/TSCA Workgroup and the iPCB Workshops to develop E & O strategies on the iPCB issue. This will include working with other watersheds to implement many of the actions identified from these efforts. The E & O Workgroup intends to present a proposal outlining these strategies to the SRRTTF for consideration at the December meeting.
- e. The iPCB/TSCA Workgroup will continue to support the E & O activities as needed.
- f. Outreach from the Gonzaga research effort on iPCBs in Products to support a data base and a subsequent presentation at the Roanoke River Conference, resulted in numerous contacts in other watersheds that are interested in information exchange with SRRTTF efforts.
- g. M. Peterson and others (Lisa Daly Wilson, Joel Breems, etc.) will take this request to develop an outreach strategy to the Education & Outreach group that may be better suited for this scope of work.
- h. We will keep this project as a placeholder on the iPCB/TSCA workgroup to assure that a strategy is developed for outreach to these other watersheds.
- i. Gonzaga and the Lands Council received an offer to present on the PCB data base development work for the SRRTTF at the virtual Roanoke River Conference on October 21-22.
- j. A draft of the presentation was sent to iPCB/TSCA workgroup members on September 2nd with a request for comments by September 9th.
- k. M. Peterson believes that their half hour presentation will be in the morning of October 21st.
- l. Additionally, sharing the driver behind this need - the discrepancy between what is allowed in products under TSCA vs water quality regulations for PCBs.

4. **iPCB Workshop/2021 Proposed Projects: Action: D. Krapas to provide an updated summary of potential projects for workgroup prioritization**

- a. Project No. 4: Concerning PCB 11 Research
 - Karl Rains (Ecology) stated that Ecology could support this research if it is focused on source identification and reduction. The wording and purpose of this research effort must fit into the current scope and mission of the Task Force.
 - Doug Krapas (IEP) and Mike Peterson (The Lands Council) agree that a better understanding of PCB 11 is needed due to its significance in the Spokane River watershed as the most prominent congener found in the water column.
 - Jeff Donovan (City of Spokane) emphasized that understanding the implications of specific PCB congeners is important in lieu of restricting all to the same level.
 - Gary Jones (Printing United Alliance) argued that we need a better understanding of PCB 11, because it is the most common PCB found in the Spokane River water column. There needs to be a better understanding of PCB 11's source and impact in order to know how to value/rank it. All PCBs are currently regulated in the same way, but there should be a way to rank PCBs so that the response can be better focused.
 - Lauren Heine (NW Green Chemistry) cautioned that embarking on ranking all PCBs is a very large project to tackle. There is a huge amount of information unknown about the health impacts of PCBs.
- b. Discussion turned to creating a different group to work on projects that might not qualify under the Task Force's mission. Project numbers 3, 4, 9, 10 and 11 fall into that category. These include evaluating the fate of PCB 11, developing a certification program for pigments, and the projects including petitioning the EPA. Doug Krapas and Mike Peterson, among others, agreed to work together in a separate group on PCB 11 research with a focus on identifying sources and valuing PCB 11's impact for work fitting the SRRTTF.
- c. Project No. 2: Developing industry list of pigments (Chlorinated vs. Non-Chlorinated)
 - Elsa Pond shared that the WA DOT needs regulatory standards/language and a list of approved substances/products for its processes. Research by itself isn't enough.
 - Robert Mott (Mott Consulting, LLC) noted that Pigment numbers aren't representative of a chronological hierarchy. He also noted the need to be careful with this topic because certain employees and associations can be reluctant to get involved if they face pressure from executives.
 1. A Color Index reference tool is maintained by The American Association of Textile Chemists and Colorists and the Society of Dyers and Colourists.
 2. "Industrial Organic Pigments: Production, Properties, Applications" is a useful book by Klaus Hunger and Willy Herbst

- Lisa Rodenburg (Rutgers) shared that “Made Safe” helps with the testing of ingredients and has built a database sharing this type of information without regulatory action.
- d. Project No. 1: Newsprint/Graphic Printing Trials with non-chlorinated pigments
 - Doug commented that this project should be combined with developing the industry list of non-chlorinated and chlorinated pigments. Conducting the trials should be the second part of the project.
- e. Project numbers 6 and 7 were advised to be moved to the E & O workgroup with Mike Peterson being involved with both workgroups.
- f. Project No. 8: Petition EPA to perform Cost/Benefit Analysis and reevaluate TSCA
 - Karl Rains (Ecology) emphasized the need to do this project
- g. Workgroup members believed that it was important to see the votes of members who chose not to rank certain projects that did not fit the goals of the SRRTTF, were outside the abilities of the SRRTTF, or could not support for other reasons.

Action: D. Krapas to provide an updated summary of potential projects with prioritizations based on both partial and full votes
- h. It appears that some workgroup members misinterpreted the ranking system and prioritized the projects opposite of what was intended.
- i. Based on the above input from members, the project prioritization will be reevaluated, corrected of any misinterpretations, consolidated and revised.

Action: D. Krapas to provide a revised summary of potential projects with prioritizations based on input from this meeting.

Previous Meeting Notes:

- D. Krapas provided a revised summary of *2021 iPCB/TSCA Workgroup Project Proposals* for consideration and discussion.
- In regards to the Technical Considerations, Project 1.b. *Industry List of Pigments*, D. Darling inquired if the NWGC Whitepaper (pages 7 to 20) sufficiently covered this proposed scope: http://srرتtf.org/wp-content/uploads/2019/07/Final20190628_iPCBs-and-Pigments.pdf

While this is a good start and example of what is being proposed, what is envisioned is a more comprehensive list of pigments manufactured with chlorinated and non-chlorinated processes.
- In regards to the Technical Considerations, Project 1.c. *Develop Certification Program for Products and/or Pigments*, Dr. Mott expressed concern that it may be difficult for industry to support since this would be creating a list of products not to buy. C. Niemi and others expressed that this does not need to be the case and that the intent can be a marketing tool to identify environmentally responsible products, similar to the vinyl flooring products RFCI Assure program: <https://www.floordaily.net/flooring-news/rfci-scs-global-launch-lvt-certification-program>
- L. Heine suggested adding the development of a chlorinated versus non-chlorinated pigments list under Technical Considerations.
- The group had a robust discussion regarding the “Evaluate fate of PCB-11” under Technical Considerations to better develop potential projects. Suggestions were made to develop a

paper/bibliography on PCB-11 related to existing work/developments (NWGC papers, work by the SRRTTF, hatchery study, etc.). D. Krapas suggested that perhaps this might be another good research project for Gonzaga.

- The slide decks and minutes from all of iPCB Working Group Meetings (Technical Considerations, Government/Regulatory, and Advocacy/Policy) were posted on the SRRTTF website: http://srrttf.org/?page_id=10188
- The outcomes and potential next step projects from the iPCB Workshop, the subsequent iPCB Working Group Meetings, and the Road Paint Whitepaper are to be compiled for evaluation by the TSCA/iPCB Workgroup.

5. Safer Products WA: Action Ecology, C. Niemi to continue updates

- a. C. Niemi did not have any new updates regarding the Safer Products WA program, so see the *Previous Meeting Notes* below for the most current status:

Previous Meeting Notes:

- b. Ecology is currently in Phase 3 develop which is to develop any regulatory actions, including: take no action, require notice, reporting restrictions, or prohibit chemicals of concern.
- c. Any chemical restrictions require that safer alternatives are feasible and available, and have included stakeholder consultation (CPMA, ACA, etc.).
- d. Ecology determinations will be available for public comment by June 1, 2022 that will be followed by Phase 4 rulemaking.
- e. D. Krapas distributed an announcement from C. Niemi regarding a presentation on the SPWA progress by Ecology on September 29th to the House Environment and Energy Committee Virtual Work Session: <https://www.tvw.org/watch/?eventID=2020091019> (starting at time 47:50).
- f. Another webinar on Phase 3 development will be held on October 8 at 1:00. A report was submitted to the legislature that includes iPCBs in Paints and Printing Inks: <https://fortress.wa.gov/ecy/publications/documents/2004019.pdf>
- g. Ecology's next steps include a public webinar in August to discuss the report

6. Funding: Action L. Dally Wilson & K. Rains to provide updates

- No new updates.

Previous Meeting Notes:

- a. Monsanto Settlement:
 - The SRRTTF sent letters of support to the Governor's office, House & Senate Leadership, and local legislators.
 - Meetings with legislators are being arranged for the month of December to discuss
- b. Funding Updates:
 - A draft Boilerplate for grant applications was developed by L.D. Wilson
 - A 2021 SRRTTF Work Plan has been developed that includes projects and funding options
 - The Funding Workgroup held a ZOOM meeting on November 3

- Mike Peterson identified a Temper of the Times Foundation grant opportunity that could support the E & O communication efforts.
- c. A suggestion was made to remove the funding discussion from the agenda for the iPCB/TSCA Workgroup since it should not be the primary focus of this workgroup and it consumes valuable meeting time. While in general agreement, D. Krapas would prefer to keep as a placeholder for discussion (time permitting) since IEP has primary responsibility lobbying for legislative funding and expressed concerns over the availability of future funding due to the state's budget problems.
- d. TTWG and Funding Workgroups to develop a coordinated strategy and consider how best to use available funding to support SRRTTF efforts.
- e. Karl will put this request onto the Funding workgroup agenda for discussion and bring recommendations to SRRTTF for consideration.
- f. L. Dally Wilson and the TTWG have developed a list of potential future projects

7. EU Recast of POP Regulations:

Previous Meeting Notes:

- h. Dr. Mott provided the following written summary regarding various PCB regulations and test methods:*

Here are references to the PCB regulations in Canada:

The first reference is to the overriding PCB Regulations which provides the limitations and reporting requirements related to pigments and PCBs:

<https://laws-lois.justice.gc.ca/PDF/SOR-2008-273.pdf>

The specific sections related to pigments are:

Colouring pigment

11 (1) A person may manufacture, export, import, offer for sale, sell, process and use a colouring pigment containing PCBs produced incidentally if the concentration of the PCBs is less than 50 mg/kg.

Colouring pigment

35 The person who manufactures, exports or imports colouring pigment in accordance with section 11 shall prepare a report that is current to December 31 in each calendar year in which the person manufactures, imports or exports the colouring pigment and that contains the following information:

- (a) the name, civic and mailing addresses, telephone number, fax number, if any, and e-mail address, if any, of the person and of any person authorized to act on that person's behalf;
- (b) an indication of whether the person manufactures, exports or imports colouring pigment;
- (c) the quantity of colouring pigment, expressed in kilograms, the maximum concentration of PCBs in the colouring pigment, expressed in mg/kg, and the average annual concentration of PCBs in the colouring pigment, expressed in mg/kg, that is manufactured, imported or exported in that calendar year;
- (d) in the case of importing, the name, telephone number and civic and mailing addresses of the person from whom the colouring pigment is imported and, in the case of exporting, the name, telephone number and civic and mailing addresses of the person to whom the colouring pigment is exported; and
- (e) a certification that the information is accurate and complete and that is dated and signed by the person or by a person authorized to act on their behalf.

The second reference is to the Toxic Substances list which contains the definition of PCBs, which

is the first chemical substance listed:

<https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/substances-list/toxic/schedule-1.html>

1. Chlorobiphenyls that have the molecular formula $C_{12}H_{(10-n)}Cl_n$ in which "n" is greater than 2
 - i. Dr. Mott provided the following briefing in regards to various PCB regulations and test methods:
 - Not much has changed in the U.S. except for the use of EPA Method 1668
 - Regulations in Canada have recently been updated. Mono- and Di-chlorinated PCBs are not in the scope and there is no test method identified.
 - European Union is confusing with so many amendments and corrections since the original POP regulations in 1976.
 - The most recent recast of POP regulations in July specified all chlorinated congeners of PCBs and the exemption of mono- and di-chlorinated congeners disappeared.
 - j. Incidental generation of PCBs is no longer in the scope, and only existing regulations from 1984 reference the use of colorants and plastics. L. Heine recalled seeing incidentals addressed in the annex.
 - k. The regulations reference Analytical Methods APA 981 (<5ppm) and EPA Method 608. The recent recast of the European Union regulations regarding persistent organic pollutants appears to disallow any contamination of PCBs in products.
 - l. J. West provided the following links to information regarding the POP Regulations:
 - https://www.chemsafetypro.com/Topics/EU/new_changes_recast_POPs_regulation_EU_2019_1021.html
 - <https://www.tuvsud.com/en-us/e-essentials-newsletter/consumer-products-and-retail-essentials/e-essentials-10-2019/eu-pops-regulation-recast-is-now-published>
 - <https://www.intertek.com/consumer/insight-bulletins/recast-on-persistent-organic-pollutants-regulation-published/>
 - <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1021&rid=3> (the recast language itself)
 - m. Regarding PCBs, the recast appears to incorporate terms of a 1996 Council Directive concerning management of equipment (transformers, capacitors, etc.) containing PCBs.
 - n. L. Heine believes that the recast is also applicable to pigments.
 - o. Dr. Mott explained that in the EU and Canada, "PCBs" means 3 or more chlorination's, so chemical companies do not even look for mono or di-chlorinated congeners.
 - p. L. Heine believes that the regulation is applicable to all 209 congeners.
 - q. Dr. Mott to locate the citation that identifies this exclusion and the test methods used in Europe and Canada to evaluate PCBs at the homologue level
- 8. EPA research opportunities:**
- a. No EPA members were present to give updates on projects.

Previous Meeting Notes:

- a. D. Krapas had a follow-up conversation with L. Edmondson on August 20, 2020 regarding the status of EPA projects:
 - Lucy stated that with the COVID situation, projects at EPA have slowed down
 - Lucy had no specific updates on the EPA projects, but will attempt to get for the TSCA/iPCB Workgroup meeting in September which she should be able to attend.
 - Lucy will attempt to track down a contact at NTP for the TSCA/iPCB Workgroup
 - C. Niemi has also been working on locating a contact at NTP for follow-up on the NTP risk study of various Congeners and Aroclors. **Action C. Niemi to track down contact at NTP**

- b. **iPCB Key words for Scholarly Articles:** Michelle stated during our February, 2020 call that EPA is resource limited and is focused on higher priority projects such as site clean-ups and iPCB product testing (see below Children's Product Testing), so this particular project has been assigned a lower priority and is currently on the back burner. **Action EPA, M. Mullin & L. Edmondson**

- c. **Children's Product Testing:** Michelle stated during our February, 2020 call that this remains a work in progress, as EPA attempts to understand the variability of the results and other environmental influences (air emissions, dust adsorption, etc.). **Action EPA, M. Mullin & L. Edmondson**

- d. **NTP risk study of various Congeners and Aroclors:** NTP is evaluating toxicity of PCB congeners 11, 95, 126, 153 and Aroclors 1016 and 1254. **Action EPA, M. Mullin & L. Edmondson**

9. Green Chemistry Considerations

- a. Action approved to add Green Chemistry to the iPCB/TSCA Workgroup Efforts.
- b. No specific projects were identified at this time.

Previous Meeting Notes:

- K. Rains suggested adding Green Chemistry considerations to the iPCB/TSCA Workgroup since it appears to be intertwined.
- B. Floyd expressed support since much of the past tasks by the Green Chemistry efforts have been completed.
- D. Krapas had been resistant in the past due to the significant workload of the iPCB/TSCA Workgroup, and suggested tabling this for further discussion once the project workload has been identified for 2021.