**Spokane River Regional Toxics Task Force**

**Coordinated Response to EPA Regarding the Remand from Judge Rothstein**

**DRAFT: June 3, 2015**

EPA has requested the following information as a coordinated response from the Spokane River Regional Toxics Task Force (“Task Force”) in order to provide information associated with Judge Rothstein’s order in the matter of *Sierra Club v. Dennis McLerran; EPA, et al*..(U.S. Dist. W. Wash. No. 11-CV-1759-BJR) This correspondence was formally approved by the Task Force on June 15th 2015.

**Executive Summary**

The Task Force is a well-functioning, collaborative effort that is making progress in identifying and reducing PCB sources in the Spokane River watershed. Each entity has expended significant time, effort, and funding to work towards the common goal of achieving PCB water quality standards. Work has been done collectively to not only create scientifically defensible data on PCBs in the watershed, but to also to identify and mitigate sources of PCBs in wastewater and stormwater, provide public education, change procurement practices, and to drive for the necessary modification of TSCA rules that allow PCBs in products at concentrations up to 50 billion times greater than water quality standards.

The Spokane River is among the more than 80,000 miles of threatened or impaired rivers in the United States that are listed for PCBs. Only about 10% of these impaired waterbodies have a TMDL. To date, not one of these waterbodies has achieved water quality standards, regardless if a TMDL was created. Task Force members strongly believe that the work they are performing under the current structure is necessary for the efficient and expedient implementation of PCB reduction activities. Continuing upon the momentum that has been gained by the Task Force is in the best interest of the Spokane River.

**Framework for the Toxics Task Force**

In 2011, the Department of Ecology (“Ecology”) issued NPDES permits for all Spokane River wastewater dischargers in Washington, including the new Spokane County wastewater treatment facility. These permits require participation by the permittees in a Regional Toxics Task Force (“Task Force”). In 2015, EPA issued permits for Idaho dischargers requiring their participation in the Task Force. The goal of the Task Force is to develop a comprehensive plan to bring the Spokane River into compliance with applicable water quality standards for PCBs.

The NPDES permits specify that if Ecology determines that the Task Force is failing to make measurable progress toward meeting applicable water quality criteria for PCBs, Ecology would be obligated to proceed with the development of a TMDL in the Spokane River for PCBs, or determine an alternative to ensure water quality standards are met.

Currently, participants of the Task Force include NPDES permittees, conservation and environmental interests including Lake Spokane Association, Spokane Riverkeeper and the Lands Council; Spokane Regional Health District; Ecology; Idaho DEQ; Washington State Department of Health; the Coeur d’Alene Tribe; and USEPA. By late 2012, the Task Force was organized, had developed an operating Memorandum Of Agreement (“MOA”) (Attachment A), established a funding entity, and procured a national expert as a community technical advisor for the important work it was undertaking. Funding for the Task Force to date has been obtained primarily from NPDES permittees in Washington and Idaho, as well as grants and a Washington State Legislative Procurement in 2013. Funding to date totals $\_\_\_\_\_.

**Background: Early PCB Investigations Unveiled Significant Data Gaps**

In April 2011, Ecology published a PCB Source Assessment for the Spokane River. This report relied on data collected between 2003 and 2007 using various sampling methods. As a result, the understanding of PCBs in the Spokane River (the river) in 2011 shows significant data gaps and inconsistencies with today’s technology. For example:

* The report calculated PCBs crossing the Idaho/Washington state line to be approximately 477 mg/day
* Between the Idaho/Washington state line and Long Lake Dam, approximately 3,187 mg/day of PCBs were estimated to be entering the river
* Measured discharges from Washington point sources (NPDES Permit Holders) accounted for about 307 mg/day of PCBs
* Tributaries to the Spokane River accounted for 97 mg/day of PCBs
* 690 mg/day of PCBs were estimated to be entering the River from the City of Spokane’s stormwater system. (Recent sampling and analysis by the City shows the estimated stormwater contribution to be approximately 46 mg/day.)

In summary, the 2011 report findings indicated that at least 66% of the PCB sources measured in the River were unknown, and much of these data were uncertain.

**Development of the PCB Reduction Work Plan**

In order to achieve their goal of developing a comprehensive plan to bring the Spokane River into compliance, the Task Force developed and adopted an initial Work Plan in 2012 (Attachment B), setting forth the Task Force vision, identifying the anticipated work required to accurately identify primary sources of PCBs, and the possible schedule for the completion of that work. The Task Force is currently on schedule with the work, and is making measurable progress in the reduction of PCBs in the Spokane River. However, as more information is learned, unanticipated questions have developed, necessitating the need for additional studies.

**Initial Task Force Actions Were Expedient and On Target**

The Task Force developed and organized the work plan by breaking the work out into Phases 1-4. In April 2013, the Task Force engaged LimnoTech, a firm with national expertise on the fate and transport of PCBs, as a technical advisor to assist with the development of an initial scope of work for its technical efforts.

***Phase 1*** *(late 2012 – early 2014)*

These initial efforts included compilation of all PCB data which may be relevant for characterizing either potential PCB source contribution or instream PCB conditions, review and evaluation of the compiled data for future use, analysis of the data to identify data gaps which are critical to developing a clear understanding of current conditions, development of a data collection strategy, companion sampling, analysis, and quality assurance project plans.

*Existing PCB Data Compilation*

An inventory of existing groundwater, stormwater, point source discharges, and river and lake sampling data has been compiled and includes publically available information (e.g. Ecology publications and open literature), as well as data from known public and private sources and Task Force members. These data were placed into an Access data base for future use. These data, while critical, require supplementation to be able to identify reduction opportunities.

*Review and Evaluation of Compiled Data*

Once the data compilation effort was completed, the data was reviewed and characterized based on quality and usability with respect to potential source identification, source delivery pathways to the river, and instream fate and transport.

*Data Gap Analysis*

An inventory of missing information (data gaps) has been developed using a conceptual model for the river. This model considered potential sources and source pathways and covered the river from its origin at the outlet of Lake Coeur d’Alene to Nine Mile Dam, below the Spokane urban area. Four main data gaps have been formally identified:

* The magnitude of true sources contributing to stormwater loads
* Sources between the outlet of Lake Coeur d’Alene and the Idaho/Washington State Line
* Loading from atmospheric sources
* Loading from groundwater sources

*Data Collection Strategy*

Based upon the above identified data gaps, the initial “Phase 2” data collection strategy was developed. This strategy was to focus on dry weather monitoring of the Spokane River between Lake Coeur d’Alene and Nine Mile Dam in order to quantify PCB loading from groundwater sources and Idaho. The strategy for the dry weather monitoring (baseline monitoring) included all point sources as well as all river and tributary locations where flow was either measured or calculated. Although uncertainty regarding exact PCB concentrations exists, this strategy assisted in the develop a report which quantifies the relative magnitude of sources for each river segment between river flow gages so that the contribution of PCB loads via unknown sources (presumably groundwater) could be determined.

Ecology, Idaho DEQ and EPA approved a Quality Assurance Project Plan (QAPP) to provide consistency and uniformity with collection of data. Data collection, associated sampling, analysis, and quality assurance are especially challenging because of the extremely low concentrations of PCBs in the water column and the absence of known sediment sources in the Spokane River. As such, the Task Force’s work in measuring PCBs at such low levels is precedent setting. We have learned that concentrations of PCBs in the laboratory blanks are near or even above those concentration levels in the samples. The QAPP and its unanimous approval by the varied stakeholders ensures all data generated from the study is more likely to be treated consistently and as accurate as possible.

***Phase 2*** *(2014 to end of 2015)*

*Dry Weather Synoptic Sampling Event in 2014: the First Comprehensive Analysis*

In August 2014, the Phase 2 data collection strategy was implemented. Sampling was conducted over a very short time period (synoptic) so that a contemporaneous “snapshot” of the river from the outlet of Lake Coeur d’Alene to Nine Mile Dam could be obtained. This event represents the *first comprehensive data collection* effort performed on the Spokane River for PCB loading between the outlet of Lake Coeur d’Alene to Nine Mile Dam and resulted in collecting approximately 70 water samples from instream locations, point sources, and flow data at each river segment at a cost of about $450,000. Initial analysis of this new data shows:

* During the dry season sampling, more than half of the river flow at the Trent gage enters the river from groundwater between the Barker and Trent gages. PCB loading from groundwater flowing into the river for this segment of the river represented the single largest mass source (mg/day) measured during the synoptic sampling event.
* Data indicates that a second segment (Greene Street to Spokane Gage) may exist where groundwater flows into the river could be contributing a significant PCB load.

**Work of the Task Force is Vital to Successful PCB Reduction Effort**

The Task Force has completed approximately one-half of the Phase 2 data collection work to identify data gaps and to create adequate data in order to characterize and quantify PCB sources. Additional data collection is needed in order to (1) evaluate if wet season sampling will give meaningful data to define seasonal variations in PCB loadings; (2) assess concentrations of PCBs in groundwater across the Rathdrum Prairie Spokane Valley Aquifer to better estimate PCB loading into the Spokane River and Little Spokane River; and (3) assess the effect of aerial deposition as a potential source to determine if aerial deposition is a significant source of PCBs into the Spokane River. When the initial work plan was developed in 2012, little was known about the technical complexity of these comprehensive PCB sampling efforts, the funding levels that would be necessary compared to available dollars, and additional data gaps that were discovered during Phase 1 and 2 activities. Accordingly, the initial work plan timeline estimates were more aggressive than was possible.

***Phase 3*** *(mid 2015 to early 2016)*

Phase 3 involves characterization and quantification of the identified sources of PCBs entering the Spokane River. It is anticipated that these sources will include all of the known point sources including wastewater treatment facilities that discharge to the Spokane River and stormwater from the City of Spokane. PCB contributions estimated from groundwater will be included as well.

Characterizing point sources will include an evaluation of PCB reduction measures that are expected to result as each wastewater treatment facility implements their facility upgrades per the Spokane River Dissolved Oxygen TMDL.

***Phase 4*** *(2016)*

Phase 4 of the initial Work Plan will develop a First Draft Comprehensive Plan, summarizing the identified sources of PCBs into the Spokane River to date. For each identified source, a range of Best Management Practices (BMPs) that could eliminate or reduce the source of the PCBs will be identified with recommendations for implementation. To address remaining data gaps, recommendations will be made for future studies to be implemented over the next permit cycle.

***Future Work***

The First Draft Comprehensive Plan will include recommendations for future studies to fill existing data gaps. Major known data gaps remaining at this time include the magnitude of PCB contribution from aerial deposition, snowmelt, and hatchery fish. Completion of these studies and the advancement of technology over time will identify where to target efforts in the future. There is much to be learned on this subject, and the Task Force is gaining significant knowledge in coordination with its collaborators across the country.

**Current Actions:**

**Task Force Maintains the Focus on PCB Sources and their Reduction and Elimination**

Based on the information developed to date, the Task Force is implementing a number of actions to reduce potential PCB sources. Maintaining this progress is the most likely pathway to reducing PCBs in the Spokane River. It is prudent that EPA’s workplan continue these actions and consider the resulting measurable progress made.

Current actions include:

* Low flow synoptic sampling has shed light on previously unidentified areas of the river where there is groundwater contribution of PCBs. The Task Force has authorized future evaluation of these areas that will direct source removal efforts.
* On a parallel track with the technical analyses, the Task Force and Task Force members are identifying and eliminating PCB contributions from stormwater runoff sources and street waste solids within their own jurisdictions.
* Task Force members are funding the establishment and maintenance of stream gages on the Spokane River in order to understand river flow in areas where significant PCB loading has been found.
* Task Force members are now involved in product testing in order to identify products which may have the greatest concentrations of PCBs. This is important to identify PCB sources that may contribute significant PCBs to the Spokane River.
* Based recent sampling by the City of Spokane, hydroseed used along roads and highways in Washington State has been identified as a source of PCBs. The Task Force is sampling and analyzing additional hydroseed samples to identify the specific product component containing the greatest amount of PCBs. The hydroseed project demonstrates the necessity of the collaborative effort: Ecology provided the grant funding, and the Task Force engaged manufacturers and state agencies for the purposes of identifying and implementing BMPs.
* Task Force members will be sampling and testing for PCB concentrations in the tissue of hatchery fish used to stock the river.
* The Task Force pushed for state adoption of legislation that restricted PCB procurement.
* The City of Spokane and Spokane County have approved policies to allow for the preferential purchase of products (or products with packaging) that do not contain PCBs above established thresholds.
* Task Force members are conducting additional studies within their wastewater and stormwater collection systems to identify specific sources of PCBs.
* The Toxic Substances Control Act (TSCA) currently allows a level of inadvertently produced PCBs that is up to 50 parts per million compared to the Spokane River standard of less than 2 parts per quadrillion. The Task Force has requested EPA support and is working with elected officials to eliminate or significantly reduce this allowance.
* Task Force members are collaborating on public outreach activities to engage the Spokane Community and reduce the usage of products containing inadvertently produced PCBs that enter the waste stream. Posters, power point presentations, website information, printed literature and brochures, public service announcements on radio and television, opinion editorials in local news papers, and presentations at scientific conferences such as the Spokane River Forum have been completed.
* Several technical workshops have been held by the Task Force, inviting experts from around the country to share their professional expertise and to best determine the path forward at critical junctions.
* Task Force members are collaborating with synergistic efforts such as the Columbia River Toxics Reductions Work Group, Northwest Green chemistry, University of Iowa Superfund Basic Research Program, The WSU Center for Environmental Research, Education, and Outreach, Rutgers University, and the Northwest Pollution Prevention Center.

**Funding**

About $1 million has been spent on direct Task Force efforts to date, including $$$ in contributions from NPDES permittees and $$$ leveraged from state funding through Ecology. In addition to Task Force activities, individual members have contributed significant funding towards efforts in their own communities. Approximately $$$$ is being invested in upgrades to treatment facilities, and at least $$$$ has been spent on collection system PCB sampling efforts, Toxics Management Plans, and stormwater management.

A significant amount of time and resources of individual members has been spent developing outreach capacity and materials in order to contribute to a literate public regarding the nature of PCBs as well as educate the public about the efforts of the Task Force in bringing the Spokane River in to compliance.

**Significant and Costly Treatment Process Upgrades are Already Proceeding**

Concurrent with the Task Force efforts to identify the unknown sources, permittees are investing in significant upgrades address the known discharges to the Spokane River. These upgrades will further reduce removal of PCBs. Driven by the Dissolved Oxygen TMDL, NPDES permits for the regional treatment facilities discharging to the Spokane River require that the next level of treatment be installed and then optimized by the year 2021 for Washington permit holders and 2024 for Idaho permit holders. For municipalities, the next level of treatment will generally include sophisticated filtration technology such as membrane filters. This technology will potentially improve the PCB removal efficiency up to 99% and is anticipated to cost a total of $\_\_\_ for the municipal dischargers. The Spokane County wastewater treatment facility, which became operational in December 2011, has demonstrated that membrane filtration technologies are capable of removing up to 99% of PCBs from municipal wastewater facilities. Permittees are already removing PCBs from their discharge with current treatment technology. A summary of PCBs currently being removed from municipal and industrial wastewater is provided as Attachment C.

**PCB TMDL Scientific Challenges**

Many scientific challenges complicate the development of a TMDL. The efforts of the Task Force have significantly increased the body of knowledge with regard to PCBs in the Spokane River, but substantial data gaps still prevent the development of a scientifically credible TMDL.

Initial studies have led to both an improved understanding of the Spokane River and to the realization that much uncertainty remains to be resolved. The following examples illustrate some of the data that would be required, which is outside the scope of the Task Force:

* At this time, there is no strong correlation between the concentrations of PCBs in the river water and in fish tissue. Initial dry season testing demonstrated that average concentrations in the river water do not exceed the current Washington State standard for PCB concentrations. A study to evaluate the correlation between PCB concentrations in river water and fish tissue must be done before a credible TMDL could be completed.
* There are insufficient data on the quantity of PCBs in sediments throughout the Spokane River basin. This information is needed to determine the effects of sediment on fish tissue, before a TMDL could be completed.
* There are insufficient data on the quantity of PCBs in invertebrates throughout the Spokane River basin. This information is needed to determine the effects of invertebrates on fish, since they are a major food source for fish.
* A fish tissue “finger printing” study is necessary to identify which PCB compounds are accumulating in fish compared to the PCB compounds that are found in the water column and discharged from specific sources. This study would show whether there is a specific correlation between PCBs in the Spokane River water column and PCBs found in fish tissue.
* It is not possible to successfully implement a TMDL to achieve the PCB water quality standard for the Spokane River as long as the current Federal TSCA allowances for PCBs in products exist (these allowances are as much as 50 billion times greater than the current water quality standard).
* Current analytical methods do not provide low enough detection limits for PCBs relative to potential applicable water quality standards for the Spokane River
* EPA has not promulgated a sampling or analytical method for PCBs to measure to the levels necessary to demonstrate compliance with a TMDL on the Spokane River.

Without this data there is inadequate information to understand how PCBs enter the river water and then how PCBs accumulate in the fish tissue.  This information is necessary to have a more complete understanding of how to meet applicable water quality standards.

**Future Role of the Task Force**

The Task Force collectively possesses the strongest scientific understanding of the Spokane River ecosystem available. Each member is an expert within their river segment, a particular area, or has a particular focus. Utilizing this group and building upon their efforts to develop the necessary scientific studies is the best opportunity in existence to close the data gaps.

The Task Force is well organized and is methodically researching the sources of PCBs to establish a credible scientific understanding of the river system. Scientific study developed with the input of critical stakeholders is less likely to result in legal and technical challenges. Involving all interested parties and building upon the momentum of the collective Task Force, using sound science to answer the questions at hand, is the most likely path toward success.

*[Note: In addition to Attachments A through C, individual members of the Task Force will submit supporting attachments to this coordinated response directly to the EPA.]*

**Attachments**

Attachment A – SRRTTF MOA

Attachment B – SRRTTF Initial Work Plan (2012) and Milestones/Schedule

Attachment C – Permittee PCB Reduction Activities to Date