PCB Product Sampling QAPP Addendum

 Supplemental Product Sampling: Spokane River Regional Toxics Task Force

 Prepared by City of Spokane Wastewater Management Department

 March 2015

## Background

The City of Spokane recently performed PCB product sampling under a Department of Ecology Grant of Regional or Statewide Significance (GRSS), number G1400545. Product sampling followed the procedures in the approved Quality Assurance Project Plan, Polychlorinated Biphenyls in Municipal Products, prepared by LimnoTech, August 5, 2014. Additional sampling beyond the scope of the grant will be performed to help further understand the sources and content of PCBs in products.

## Description of Additional Studies

The Spokane River Regional Toxics Task Force has authorized studies that supplement the work performed under the City’s GRSS Grant. The objective of these efforts is to further identify the sources of PCBs in products and components of products. This work will assist manufacturers in producing lower-PCB alternatives for the State and City to purchase, therefore reducing the amount of PCBs imported to our watersheds.

The first samples to be collected will include various brands of hydroseed and their associated components. Some of the components to be sampled will include items such as dye, surfactant, and water used in the manufacturing process. Other products may be sampled, including items such as tackifiers and different formulations of 2,4-D, as funding allows.

## Sampling, Measurement, and Quality Control Procedures

Sampling will be performed by the manufacturer in many cases. A copy of the QAPP and this addendum will be sent to the sampler to ensure proper collection.

The Sampling Procedures in Section 6 of the QAPP will be followed for sample collection, with the following exceptions:

* Because manufacturers may not have the standard sampling equipment on hand, the contract laboratory will prepare and ship sampling kits including coolers, sample instructions, gloves, laboratory-prepared sample jars, and chain of custody to the sampler.
* Sample labeling: Samples will be labeled by the sampler at the time of sample collection using the following format:
	+ Manufacturer ID – Product ID – collection date (MMDDYY) – collection time (military).
		- Example: XYZ Manufacturing collected a sample of their dye on March 17, 2015 at 3:00 in the afternoon. The sample would be labeled XYZ-dye-030715-1500
		- The Manufacturer and Product ID codes will be chosen by the sampler and a written description will be sent to the contract laboratory with the samples.

The Measurement Procedures in Section 7 of the QAPP originally included only EPA Method 1668, which gives results for all 209 PCB congeners to a very low detection limit, but is more costly. Based on funding and the need for less expensive screening-level testing, sampling for the SRRTTF study may be performed using EPA Method 8270D GC/LRMS (EPA, 1994), 8081 modified by EPA 625 (Axys in-house method MLA-007). This method gives results for the 209 PCB congeners, but at a higher detection limit and lower cost. The preferred method of analysis will be denoted on the sample chain of custody. The following tables supplement the associated tables in the QAPP specifying laboratory methods and quality objectives:

Supplemented QAPP Table 4. Measurement Quality Objectives

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Analyte | Analytical Method | Daily Calibration Verification | Laboratory Control Samples | Surrogate Recovery | Laboratory Blanks | Laboratory Duplicate | Sensitivity |
|  |  | % recovery limits | % recovery limits | % recovery limits | Concentration (ppb) | Relative Percent Difference c | Detection limit/congener (ppb) |
| PCB congeners (low-detection limit) | EPA 1668C | 50-145% | 60-135% | 5-145%a10-145%b | 0.05 – 0.2 | + 25% | 0.02 to 0.1 |
| PCB congeners (lower cost, higher detection limit) | Axys MLA-007 |  |  |  |  |  | 0.1 to 0.5 |

 a – MoCB to TriCB

b – remaining congeners

c – applies only when values are > 10 times the detection limit

Supplemented QAPP Table 10. Laboratory Methods and Detection Limit

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Sample Matrix | Detection Limit | Expected Concentrations | Analytical Method | Laboratory |
| PCB congeners (low-detection limit) | Solid, liquid | 0.0001 ppb | 0.01-2,500+ ppb | EPA 1668C | Ecology-Accredited |
| PCB congeners (lower cost, higher detection limit) | Solid, liquid | 0.2 ppb | 0.5 – 2,500+ ppb | Axys MLA-007 | Axys |

The Data Management Procedures in Section 9 will be followed with the exceptions noted below. Samplers will be asked to fill out a copy of the sample sheet on page 32 of the QAPP, or equivalent.

* Field QC samples (replicates, equipment blanks) will not be collected.
* Electronic data management will be managed through the SRRTTF and/or Ecology’s database as appropriate and available. An electronic data deliverable (EDD) template will be provided by SRRTTF to the contract laboratory.