Evaluation of Polychlorinated Biphenyls Concentrations in Fish from the Dan River in 2014

Dan River

DANVILLE, VIRGINIA

Letter Health Consultation

March 23, 2016

Virginia Department of Health
Division of Environmental Epidemiology
109 Governor Street
Richmond, Virginia 23219

COMMONWEALTH of VIRGINIA

Department of Health – Office of Epidemiology

MARISSA J. LEVINE, MD, MPH
INTERIM STATE HEALTH COMMISSIONER

PO BOX 2448
RICHMOND, VA 23218

TTY 7-1-1 OR
1-800-828-1120

March 23, 2016

Gabriel Darkwah
Lab Data Coordinator
Virginia Department of Environmental Quality
629 E. Main Street
Richmond, VA 23219

Dear Gabriel Darkwah,

Thank you for providing the polychlorinated biphenyls (PCBs) fish tissue concentrations results in fish collected along the Dan River above Danville, VA in 2014. The Virginia Department of Health (VDH) has finished reviewing the results for public health implications as requested. VDH concludes that the concentrations of PCBs in fish tissue collected from the Dan River above Danville in 2014 are not expected to harm people's health. VDH does not have any recommendations at this time. Currently, there is no fish consumption advisory for this segment of the river.

BACKGROUND and DISCUSSION

In 2014, the VA Department of Environmental Quality (DEQ) collected fish from the Dan River upstream of Danville. This was done, in part, to evaluate if the 2014 coal ash release at Duke Energy in North Carolina had resulted in a change in PCBs and metal concentration in fish tissue from the Dan River upstream of Danville. See Table 1 in the attachment for PCB fish tissue results. Fish collection and laboratory analysis will not be discussed.

In October 2000, pursuant to § 32.1-248.01 of the *Code of Virginia*, VDH published guidelines for issuance of fish consumption advisories due to contamination of fish, including PCBs. The most recent changes to developing fish consumption guidelines for fish contaminated with PCBs came about in 2012 following the release of the U.S. Environmental Protection Agency's 2011 Exposure Factors Handbook[1]. The guideline containing the derivation of the PCB screening value (SV), adverse health effects, and sources is available at Virginia Regulatory Town Hall.[2]

[1] http://www3.epa.gov/

[2] http://www.townhall.virginia.gov/

The current fish consumption guidelines for PCBs are as follows:

- When PCBs levels in fish range from 100 to below 500 micrograms per kilogram (µg/kg), VDH recommends limiting consumption of contaminated fish species to two, 8-ounce meals per month.
- When levels equal or exceed 500 µg/kg in fish, VDH recommends avoiding consumption of contaminated fish species.

The PCB concentration in all of the fish collected from the Dan River was below the SV.

CONCLUSION

VDH concludes that the concentrations of PCBs in fish tissue collected from the Dan River above Danville in 2014 are not expected to harm people's health.

RECOMMENDATION

VDH does not have any recommendations at this time.

I trust that the above information will be of help to you. Should you have any additional questions please contact Dwight Flammia, Ph.D., at (804)-864-8127 or at dwight.flammia@vdh.virginia.gov.

Dwight Flammia, Ph.D.
State Public Health Toxicologist
Virginia Department of Health
Richmond, VA 23219

This report was supported in part by funds provided through a cooperative agreement with the Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services. The findings and conclusions in these reports are those of the author(s) and do not necessarily represent the views of the Agency for Toxic Substances and Disease Registry or the U.S. Department of Health and Human Services. This document has not been revised or edited to conform to agency standards.

Table 1. PCB tissue concentrations in fish collected from the Dan River in August and October 2014

DEQ Site #	Station name/location/description	DEQ River mile	Sampling Date & Time	Fish species name	No. of fish analyzed	Length (cm)	Weight (g)	Total PCB*
14PF032	Dan River near NC-VA State Line at Rt. 880 bridge	4ADAN075.22	10/01/2014 12:00	Golden Redhorse Sucker	3	33.0 - 34.0	350 - 390	1.13
14PF033	Dan River near NC-VA State Line at Rt. 880 bridge	4ADAN075.22	10/01/2014 12:00	Carp	1	67.0	4550	11.84
14PF034	Dan River near NC-VA State Line at Rt. 880 bridge	4ADAN075.22	10/01/2014 12:00	Largemouth Bass	2	33.0 - 35.0	540 - 550	2.61
14PF035	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Carp	3	58.5 - 59.4	2970 - 5119	5.66
14PF036	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Carp	3	59.2 - 73.4	2909 - 3512	2.93
14PF037	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Channel Catfish	5	38.1 - 50.5	420 - 1196	10.21
14PF038	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Largemouth Bass	2	29.5 - 29.7	335 - 342	1.13
14PF039	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Golden Redhorse Sucker	3	33.4 - 35.5	399 - 483	2.27
14PF040	Dan River above Schoolfield Dam	4ADAN060.16	08/04/2014 14:00	Quillback Carpsucker	2	44.8 - 46.5	1179 - 1473	8.96
14PF041	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	Golden Redhorse Sucker	5	35.2 - 41.5	458 - 771	1.72
14PF042	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	Golden Redhorse Sucker	5	38.5 - 40.1	504 - 686	2.67
14PF043	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	White Sucker	5	36.3 - 43.2	540 - 929	6.35
14PF044	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	Carp	2	67.2 - 72.1	4374 - 4669	35.53
14PF045	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	Carp	2	60.6 - 64.3	2880 - 3540	22.06
14PF046	Dan River above Union Street Dam	4ADAN056.80	08/05/2014 11:55	Quillback Carpsucker	2	38.4 - 43.0	790 - 1067	15.63

*Total PCB denotes sum of polychlorinated biphenyl congeners