Two Mile Creek PCB Sampling
Summary Report
December 2001

Introduction

The objective of the Two Mile Creek PCB sampling was to determine if there were active sources of PCBs discharging into the creek. Four sampling sites were selected along the length of the creek. The stream flow at these sites was sampled during both wet and dry weather conditions.

Method

The four sampling sites selected are shown in Figure 1 and are described as follows:

Twin Cell Site: Located immediately downstream of a dam impounding a small pond just north of Sheridan Drive (Route 324). A twin cell storm sewer discharges to the creek at the face of the dam.

Oriskiny Site: Located at a small bridge over the creek on the Sheridan Park Golf Course. The sample site is below the Oriskiny Street storm sewer. This storm sewer services the area containing a General Electric transformer repair facility. An investigation of this plant site has identified the presence of PCBs.

Fire Tower Site: Located downstream of both the former wastewater treatment plant (no discharge to Two Mile Creek) and the fire training tower.

River Road Site: Located downstream of River Road near the Niagara River. A tributary known as Rattlesnake Creek enters Two Mile Creek above this point.

The first round of sampling was conducted on May 10, 2000 under wet weather conditions. Storm sewers were discharging into the creek. The second round was conducted on August 29, 2000 under dry weather conditions. The water level in the creek was low and there was no discharge from the storm sewers.

Whole water samples were taken at each site with duplicate samples at the Oriskiny Site in both rounds. Each sample collected under both wet and dry weather conditions was a two liter composite of four grab samples taken over a three hour period. The samples were analyzed for PCBs using USEPA Method 1668.

Results

The results of the sampling are summarized in Table 1. The data shows higher PCB concentrations in the wet weather samples. The wet weather sample at the Twin Cell Site had a PCB concentration of 0.090 ug/l. The PCB concentration increased at each subsequent downstream site during the wet weather sampling. The congener distribution for wet weather sampling is shown in Figure 2. This shows a slight change in congener distribution between the Twin Cell Site and the Oriskiny Site as well as change at the River Road Site.

The dry weather sampling showed a similar pattern of increasing concentrations at each downstream site. The congener class distribution for the dry weather sites is shown in Figure 3. Comparisons of the wet and dry weather distributions for each site are contained in Figures 4 through 7. The Twin Cell Site dry weather sample showed a PCB concentration of 0.009 ug/l. The concentration increased to 0.030 and 0.015 ug/l for the duplicate samples at the Oriskiny Site and to 0.034 ug/l at the River Road Site. The homolog distribution for the dry weather sampling (Figure 3) varied significantly among the samples and showed no clear pattern. While the homolog distribution for the duplicate samples in the wet weather sampling showed close correlation, the dry weather duplicate samples showed little similarity in homolog distribution.

Discussion

The wet weather data indicated the presence of PCBs upstream of the Twin Cell Site and in the twin cell storm sewer. Downstream of the Twin Cell Site and upstream of the Oriskiny Site are three storm sewer discharges. One storm sewer services a largely residential area. The second, the Ensminger Road storm sewer, showed a PCB concentration of 0.001 ug/l in a PISCES sample in 1995. The third, the Oriskiny storm sewer which serves the General Electric transformer repair facility had a PCB concentration of 0.030 ug/l during the same PISCES sampling in 1995.

Sediment sampling (conducted by General Electric) in the Oriskiny storm sewer and the Milens Road storm sewer that is tributary to the Oriskiny storm sewer indicated the presence of PCBs in the sediments. The highest concentration detected offsite was 300 mg/kg at the North end of Milens Road (just off the General Electric site). There are no other known potential sources of PCBs in this storm sewer.

Between the Oriskiny Site and the Fire Tower Site is the former wastewater treatment plant (no discharge) and the Fire Tower. While there was an increase in PCBs during the wet weather sampling in this reach, the average of the dry weather duplicate samples at the Oriskiny Site was similar to the dry weather PCB concentration at the Fire Tower Site.

The reach of the creek between the Fire Tower Site and the River Road Site receives flow from some minor residential storm sewer discharges and a tributary, Rattlesnake Creek. Previous PISCES sampling of Rattlesnake Creek in 1994 detected PCBs at a concentration of 0.159 ug/l.

Conclusions and Recommendations

The General Electric transformer repair facility tributary to the Oriskiny storm sewer is currently undergoing site investigation and remediation under the Resource, Conservation and Recovery Act (RCRA).

Additional sampling in the twin cell storm sewer is recommended to identify the source of PCBs observed during wet weather sampling. Sampling for PCBs in Rattlesnake Creek is also recommended due to the elevated PISCES sample result.

Table 1
Whole Water PCBs, Two Mile Creek
NYSDEC, 2000

	Wet Weather Sampling (05/10/00)					Dry Weather Sampling (08/29/00)				
	Twin Cell	Oriskiny*	Oriskiny*	Fire Tower	River Rd.	Twin Cell	Oriskiny*	Oriskiny*	Fire Tower	River Rd.
Total PCBs (ug/l)	0.090	0.115	0.098	0.127	0.131	0.009	0.030	0.015	0.022	0.034
Congener Class										
mono	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
di	2%	2%	1%	2%	0%	8%	3%	2%	22%	4%
tri	16%	16%	14%	15%	11%	23%	15%	14%	31%	11%
tetra	27%	31%	31%	28%	31%	21%	34%	21%	17%	28%
penta	17%	15%	18%	18%	27%	15%	21%	21%	12%	23%
hexa	16%	15%	16%	17%	17%	18%	14%	23%	10%	20%
hepta	12%	11%	11%	12%	9%	12%	8%	14%	5%	11%
octa	7%	6%	7%	6%	4%	3%	3%	4%	1%	3%
nona	2%	2%	2%	2%	1%	1%	1%	0%	0%	1%
deca	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%

* Duplicate Samples

Figure 1
Locations of Sample Points on Two Mile Creek
Whole Water Sampling (2000)

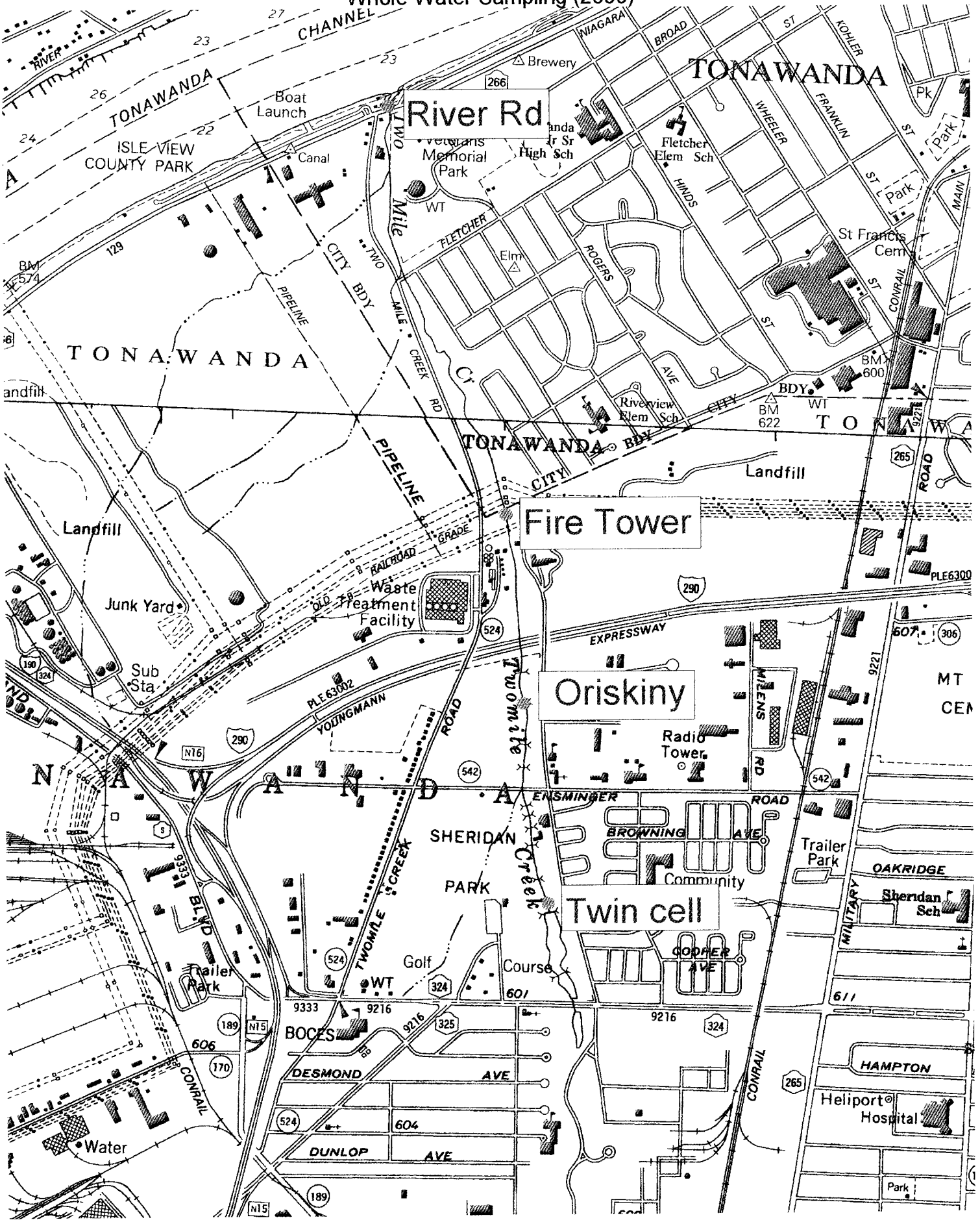

Figure 2
Two Mile Creek, Wet Weather Sampling PCB Homolog Distributions
Whole Water Sampling (2000)

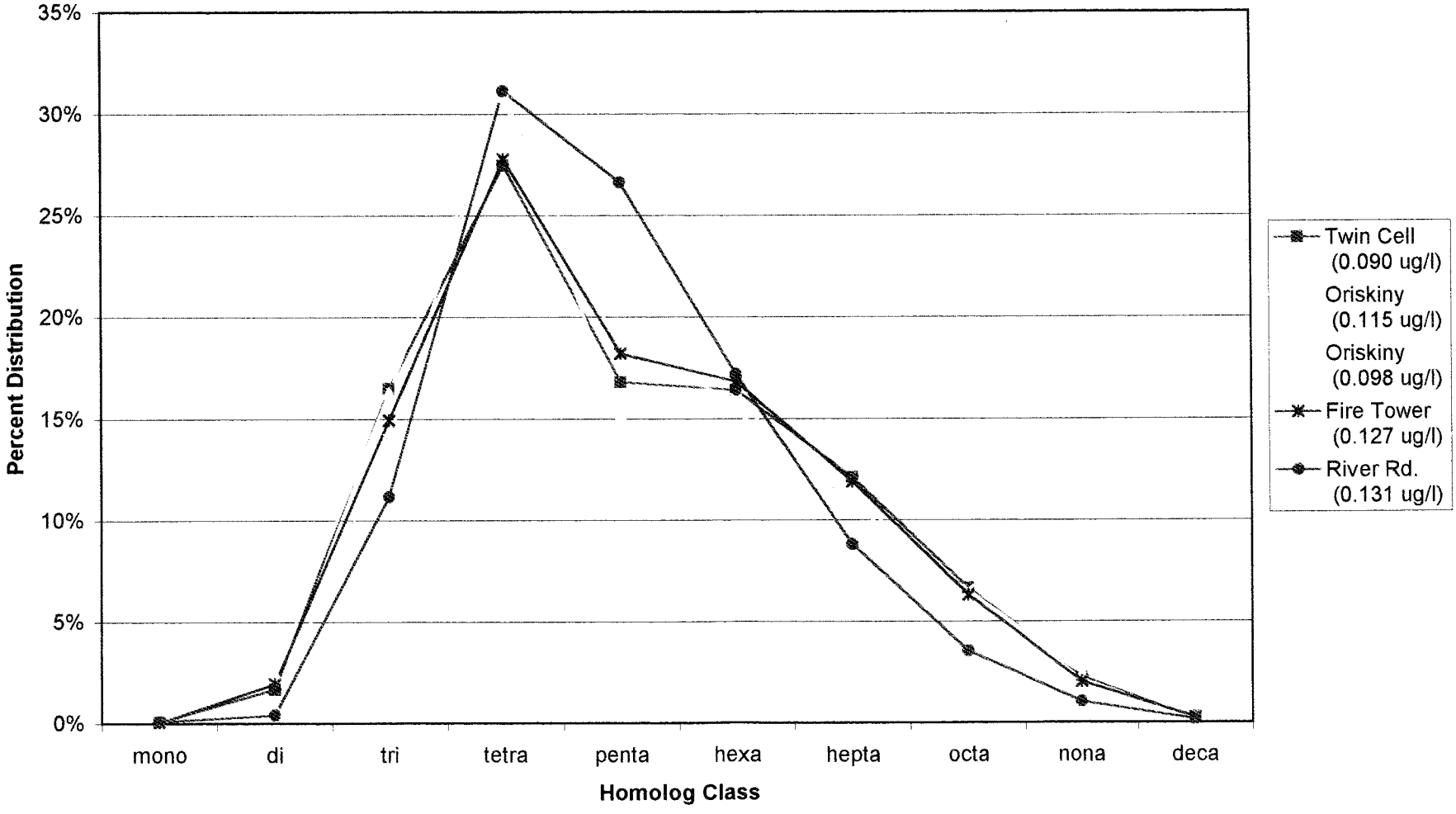

Figure 3
Two Mile Creek, Dry Weather Sampling PCB Homolog Distributions
Whole Water Sampling (2000)

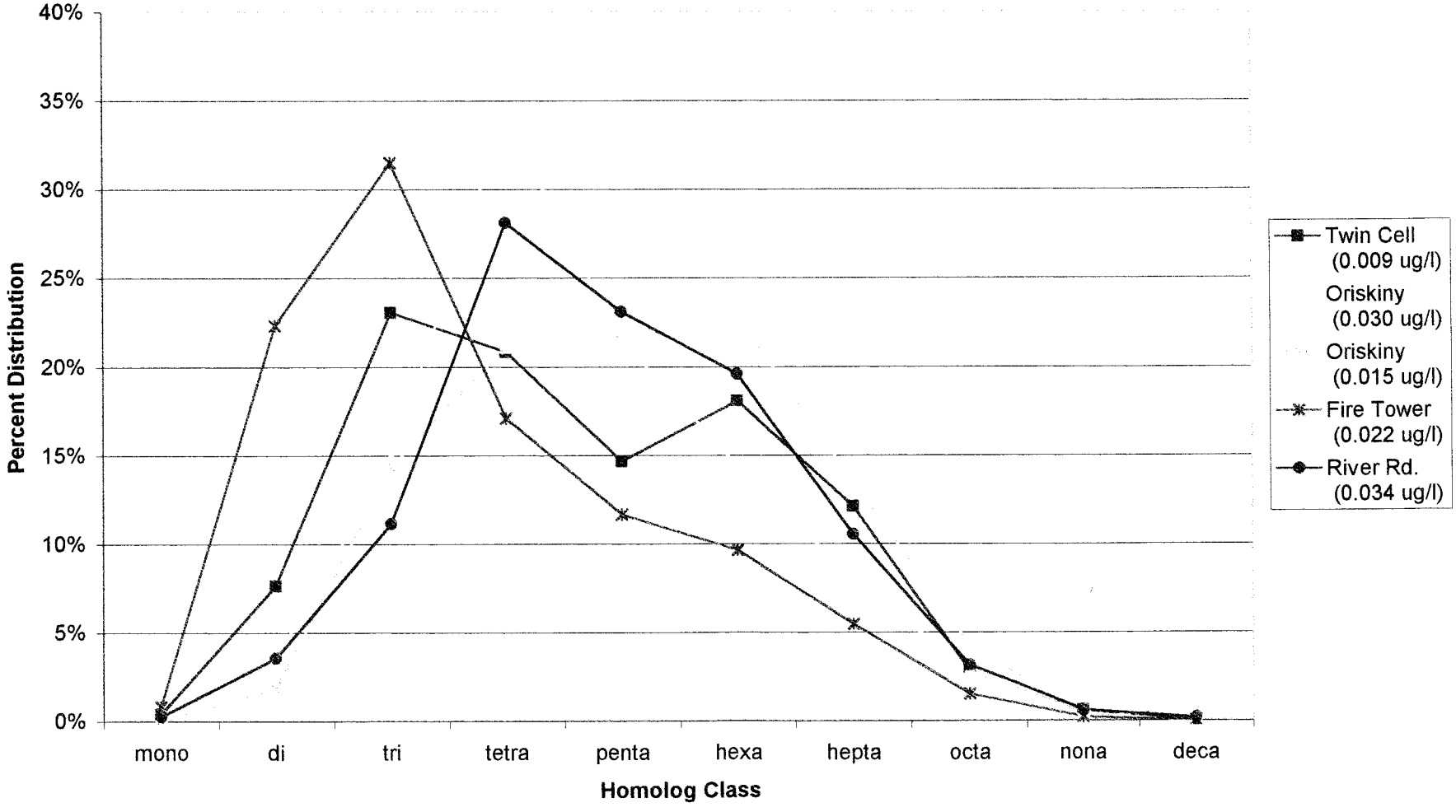

Figure 4
Two Mile Creek at Outlet of Twin Cell, PCB Homolog Distributions
Whole Water Sampling (2000)

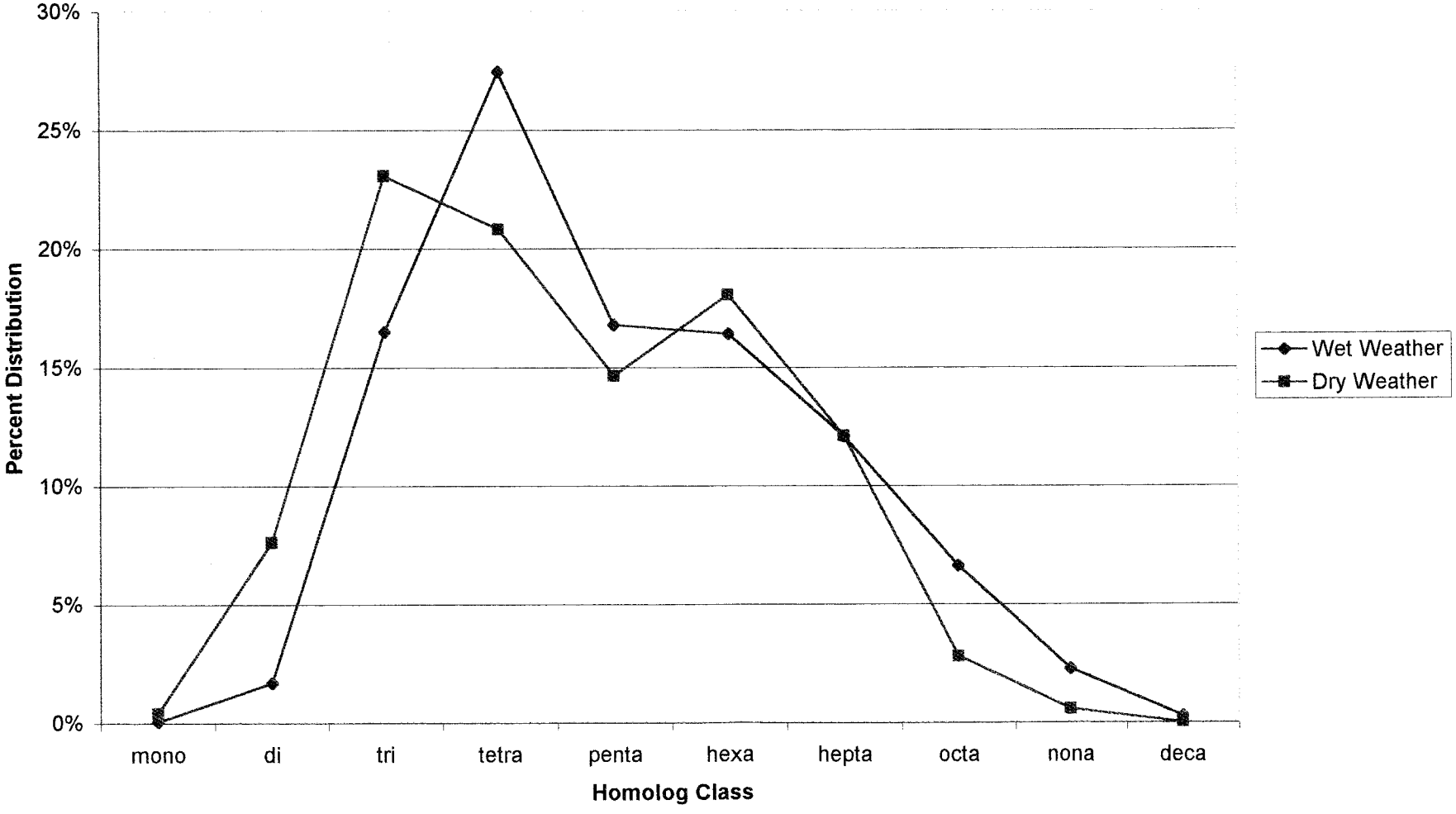

Figure 5
Two Mile Creek at Oriskiny, PCB Homolog Distributions
Whole Water Sampling (2000)

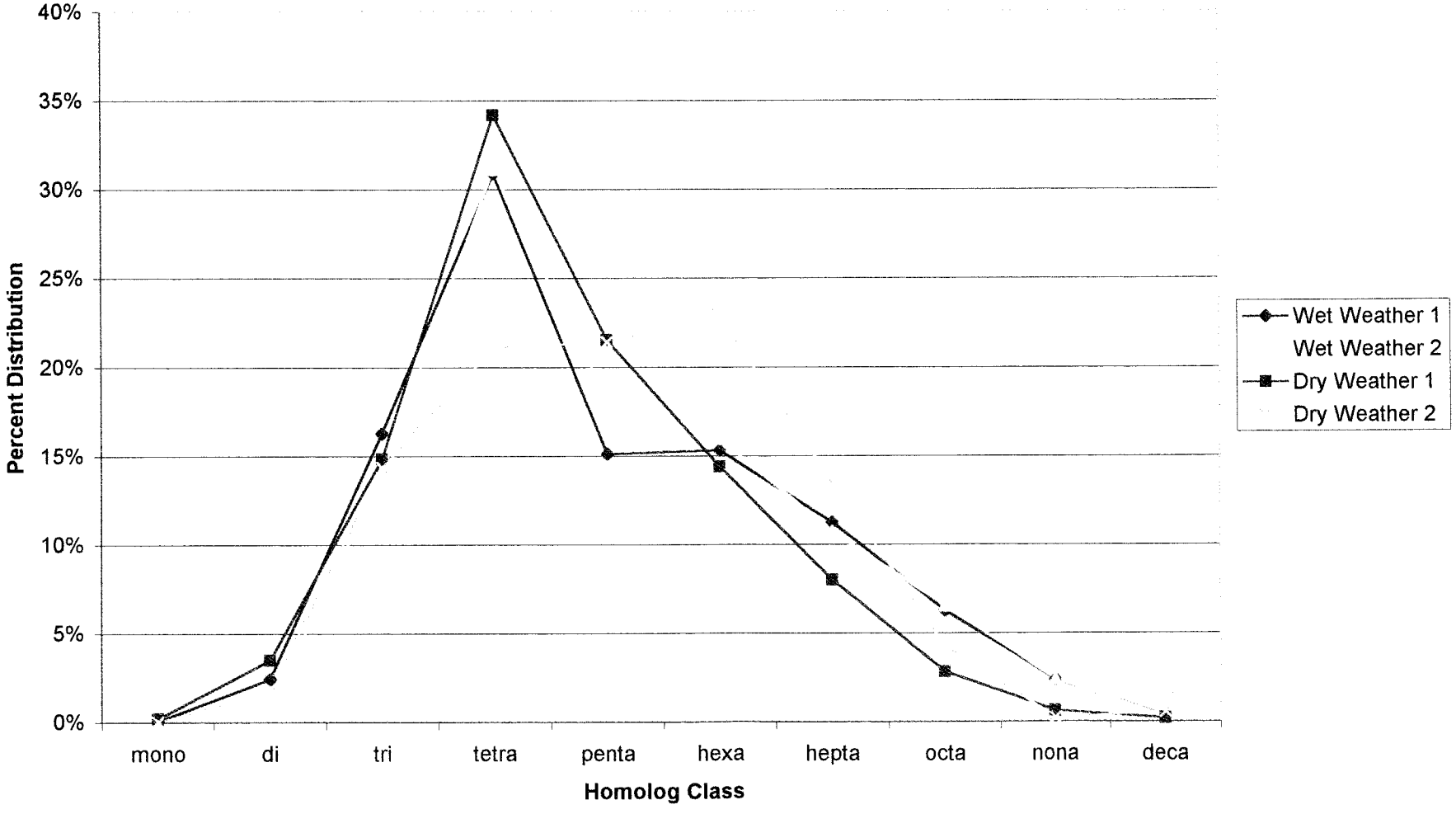

Figure 6
Two Mile Creek at Fire Tower, PCB Homolog Distributions
Whole Water Sampling (2000)

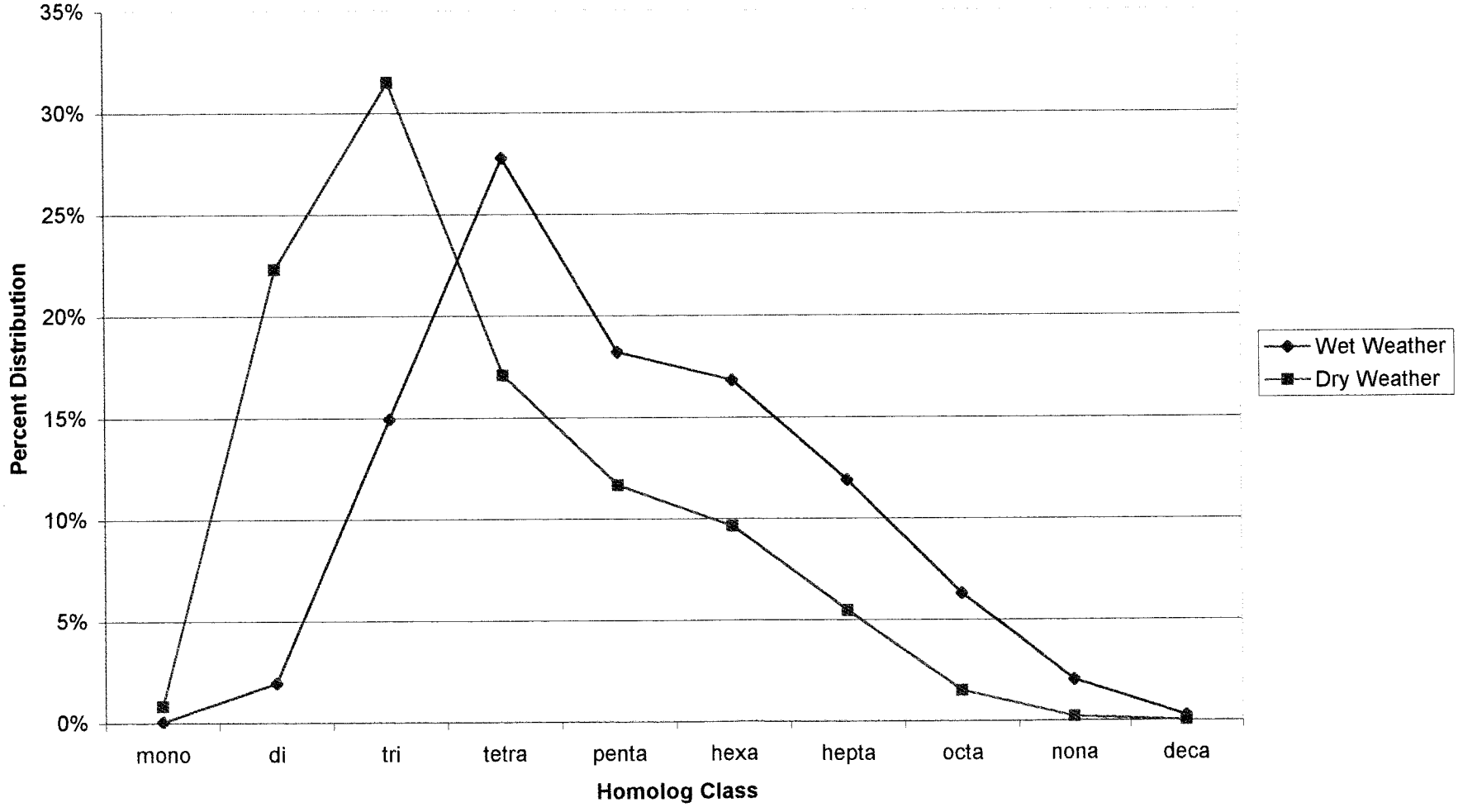

Figure 7
Two Mile Creek at River Road, Homolog Distributions
Whole Water Sampling (2000)