Biota Sampling Report for Wappinger Creek Three Star Anodizing Site (3-14-058) Wappingers Falls, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by

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October 2007
Revision: DRAFT
EA Project No. 14368.10

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CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C. and its affiliate EA Science and Technology to collect aquatic biota from Wappinger Creek at the Three Star Anodizing site, Wappingers Falls, New York (Figure 1).

The Work Assignment was conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-10).

The objectives of this Work Assignment were to:

- Collect aquatic biota (fish and aquatic invertebrate) samples from the tidal portion of Wappinger Creek to determine the concentration of eight metals in fish and invertebrate tissue

- Analyze tissue samples for arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

As part of this task, EA collected fish and aquatic invertebrate tissue and subcontracted laboratory services for analysis of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc in tissue samples. Data were reviewed and validated by an independent data validation subconsultant.

2. SAMPLING AND ANALYTICAL METHODS

2.1 FISH TISSUE COLLECTION

Fish were collected from two sampling areas shown on Figure 2; locations and sampling procedures are described in more detail below:

- ***Fish Sampling Area 1 (FSA-1) – Embayment and Shoal***—Sampling began in the embayment and worked upstream through the shoal area until the target number of samples were collected.

- ***Fish Sampling Area 2 (FSA-2) – The Downstream Section***—Sampling began at the County Route 28 bridge and worked upstream until the target number of samples were collected.

A total of 60 samples of fish tissue were collected across the two sampling areas. The Work Assignment and Field Sampling Plan (EA 2007) specified that for each sampling area, 15 samples would be collected for each of 2 target species for a total of 30 samples.

WAPPINGER CREEK FISH COLLECTION		
Location	Target Species	No. of Samples
FSA -1	Largemouth Bass	15
	Spottail Shiner	15
FSA -2	Largemouth Bass	15
	Spottail Shiner	15
TOTAL		60

The target species for this sampling effort were largemouth bass (*Micropterus salmoides*) and spottail shiner *(Notropis hudsonius)*. These species were chosen to represent different trophic levels; that is, largemouth bass represent top trophic level piscivore and spottail shiner represent lower trophic level forage fish. During the field sampling effort, it became apparent that adequate numbers of the target species could not be collected to fill the sampling quotas; therefore, in consultation with NYSDEC, other target species of opportunity were selected to augment the number of samples. The "targets of opportunity" were selected to represent similar trophic levels as the target species. Smallmouth bass *(Micropterus dolomieu)* were collected to complete the quota for largemouth bass and banded killifish (*Fundulus diaphanus*) and tessellated darters (*Etheostoma olmstedi*) were collected to supplement spottail shiner samples.

Fish tissue sampling was conducted on 1-3 May 2007.

Electrofishing by boat was the primary collection gear for sampling Wappinger Creek; however, 100-ft beach seine, experimental gill nets, and wire-mesh minnow traps were also used.

Sampling was conducted under NYSDEC License to Collect and Possess No. 1051. Sampling procedures complied with the Field Sampling Plan (EA 2007) and were consistent with *Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis* (NYSDEC Division of Fish, Wildlife, and Marine Resources, Bureau of Habitat 2002). These methods were established to optimize collection of specimens for contaminant analysis rather than quantification of sampling effort.

2.2 INVERTEBRATE TISSUE COLLECTION

Invertebrate sampling was conducted at four locations shown on Figure 3 and described below:

- Wappinger Biota Station 1 (WBS-1) – Shoal area
- Wappinger Biota Station 2 (WBS-2) – Embayment
- Wappinger Biota Station 3 (WBS-3) – Downstream section (i.e., the widest section of Wappinger Creek)
- Wappinger Biota Station 4 (WBS-4) – County Route 28 Bridge.

Odonata (i.e., dragonfly larvae) were selected as the target organism for assessment of metal contaminants in forage invertebrate tissue. If the targeted taxon could not be collected, non-target species of opportunity were to be retained for analysis. Suggested invertebrate targets of opportunity included crayfish, stonefly larvae, caddis fly larvae, hellgrammites, and mollusks.

A total of 20 invertebrate samples were proposed for analysis; five samples from each of four stations:

WAPPINGER CREEK INVERTEBRATE COLLECTION		
Location	Target Organism	No. of Samples
WBS-1	Dragonfly Larvae	5
WBS-2	Dragonfly Larvae	5
WBS-3	Dragonfly Larvae	5
WBS-4	Dragonfly Larvae	5
TOTAL		20

Sampling efforts for invertebrates were conducted during the fish sampling on 1-4 May and additionally on 14 June and 29 August 2007.

Invertebrate nets, sieve buckets, ponar dredge, crayfish traps, and hand picking from rocks and stem and root masses of aquatic vegetation were used as collection methods for sampling Wappinger Creek.

2.3 SAMPLE PREPARATION AND ANALYSIS

Total length and weight were recorded for all fish specimens. After measuring length and weight, fish samples were inspected for gross morphological conditions and abnormalities: fin erosion, skin ulcers, skeletal/shell anomalies, and neoplasms (tumors). Completed Field Data Forms are provided in Appendix A.

Largemouth and smallmouth bass collected for filet samples were placed in individual zip-lock bags labeled with sample number, location, date, taxon, initials of the sampling crew, and sample type (i.e., fillet). The bags were placed on ice in the field and then frozen as soon as possible after return from the field.

Total length and weight of individual forage fish that composed each composite sample for whole body analysis were recorded. Groups of forage fish and invertebrates comprising each composite sample were placed in labeled zip-lock bags and placed on ice in the field. After return from the field, these samples were transferred to decontaminated glass jars provided by the laboratory and frozen.

Frozen samples were double bagged and shipped on ice in coolers by overnight courier service to Pace Analytical Services. All samples in each cooler were logged on a Chain-of-Custody Form (Appendix B) which was affixed to the inside of the cooler. Coolers were taped closed and sealed with a signed Custody Seal.

Final tissue preparation and homogenization for analysis were performed by the analytical laboratory. Tissue sample preparation followed the protocols described in *Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis,* except for project specific modifications specified in the Contract Work Assignment and described in the Field Sampling Plan (EA 2007). Largemouth bass and smallmouth bass were prepared by the analytical laboratory using the standard filleting method while composite samples of spottail shiner, banded killifish, and tessellated darters were prepared for whole body analysis by the analytical laboratory.

The sample mass was sufficient to provide the laboratory with adequate tissue to allow achievement of the established analytical detection limits, whether the sample was a filet or a composite. Pace Analytical Services specified that 5 g of tissue was adequate to achieve the specified detection limits, but that samples consisting of 10-15 g of tissue were preferable. Bass filets were prepared with scales removed, but skin on; each sample consisted of one entire filet. The left filet was used for all primary analyses; the right filet was used for field duplicate analyses. The unused fillet from each specimen and unused homogenate were retained by the laboratory, in the event that additional analyses were requested.

Each sample was analyzed for arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc concentrations. U.S. Environmental Protection Agency SW-846 Method 7471A was used for mercury and Method 6020 was used for the Resource Conservation and Recovery Act

metals. Laboratory quality control methods and samples are described in the project Quality Assurance Project Plan (EA 2007) and included matrix spike/matrix spike duplicate, laboratory control sample, blanks, instrument calibrations, dilutions, and field duplicates.

The laboratory data packages (Appendix C) were reviewed for compliance with protocols and methods and data usability by Environmental Data Services, Inc of Williamsburg, Virginia. The Data Usability Summary Review Reports are provided in Appendix D. These data have been validated according to the protocols and quality control requirements for the analytical methods, EPA Region II Standard Operating Procedure (HW2 Revision, 11 January 1992) for the Evaluation of Metals Data for the Contract Laboratory Program.

3. FIELD OBSERVATIONS AND ANALYTICAL RESULTS

3.1 SAMPLE COLLECTIONS

3.1.1 Fish Sampling

Fish samples were collected from the tidal reach of Wappinger Creek on 1-3 May 2007 from the sampling areas designated FSA-1, the upstream embayment and shoal, and FSA-2, the downstream reach above the highway bridge at County Route 28. The primary sampling method was boat electrofishing focused in the vicinity of woody debris along the intertidal shore zone and in the embayment within 1-2 hours of high tide. Supplemental sampling using gill nets and beach seines was also conducted. A photo record of field sampling activities and aquatic habitat in the study reach is provided in Appendix E.

The majority of largemouth bass for analysis of edible filets were collected by electrofishing; however, the number of specimens collected was insufficient to meet the sample quota for area FSA-1. Four smallmouth bass collected in area FSA-1 by electrofishing were used to complete the sample quota for top predators from this sampling area. Two field duplicate samples of largemouth bass were analyzed.

Forage fish for analysis of whole body contaminant burden were collected by electrofishing and beach seine. Fifteen samples plus a field duplicate of spottail shiner were collected from area FSA-1; seven samples plus a field duplicate of spottail shiner were collected from area FSA-2. In consultation with NYSDEC, the sample quota for FSA-2 was completed with 6 samples of banded killifish and 2 samples of tessellated darter.

Largemouth bass ranged in size from 269 to 509 mm total length and 278-2,600 g total weight. The mean length and weight for largemouth bass from area FSA-2 were slightly higher than for bass collected from area FSA-1. Smallmouth bass were collected only from area FSA-1 and measured 344-407 mm in total length; weight ranged from 424 to 1,003 g. All bass of both species appeared generally healthy and robust. Four largemouth bass (two from each sampling area) and one smallmouth bass had lesions on their mandible and abdominal area. All the sores were fresh and clean with no apparent secondary fungal or bacterial infections. As these collections were made during the spawning season, it is possible that the sores were a result of abrasions sustained during nest excavation activities. No other abnormalities or deformities were observed on any of the other bass.

Composite samples of spottail shiners were comprised of 1-6 individuals; most composites contained two specimens. The total length of spottail shiners collected from area FSA-1 ranged from 94 to 115 mm; the mean length of the composite samples ranged from approximately 100 to 111 mm. The total length of spottail shiners collected from area FSA-2 ranged from 76 to 114 mm; the mean length of the composite samples ranged from approximately 81 to 113 mm. The weight of spottail shiners from FSA-1 ranged from 7.1 to 15.1 g; spottail shiners from FSA-2 weighed between 3.7 and 14.6 g. No abnormalities or deformities were observed on any

spottail shiners. The 6 samples of banded killifish from FSA-2 were composites of between 3 and 26 specimens. Total length of banded killifish ranged from 30 to 84 mm with average lengths of composite samples between 40.9 mm 68.3 mm. Individual weights ranged from 0.3 to 2.3 g. No abnormalities or deformities were observed for any banded killifish.

Total length of tessellated darters ranged from 51 to 64 mm; the mean length of the two composite samples were 58 and 59.2 mm. Individual weights ranged from 1.1 to 3 g. No abnormalities or deformities were observed for any tessellated darters.

3.1.2 Invertebrate Sampling

Invertebrate sampling occurred on 1-4 May, 21 June, and 29 August 2007. The most productive sampling was from picking organisms off rocks in the intertidal zone. In general, macroinvertebrates were scarce on all sampling dates. No Odonate larvae were collected on any date and few adult dragonflies were observed in the sampling areas. Numerous grab samples were collected using nets, buckets, and ponar dredge in the cove (WBS-2), along the shore, on the shoal (WBS-1), and in the channel of the tidal reach of Wappinger Creek (WBS-3 and WBS-4). During the May 2007 sampling, the cove and main channel of the Creek had open water with minimal aquatic vegetation. During the subsequent June and August sampling, much of the specified sampling areas in the tidal reach were choked with water chestnut. On the June and August visits, the cove was filled with a diversity of emergent and submerged wetland vegetation. An extensive effort was expended examining the stems and root mass to aquatic vegetation in the cove wetland and the extensive beds of water chestnut for invertebrates. No live Odonates or their cast-off exoskeletons were found on stems of the wetland vegetation. Extensive searching among rocks and on the substrate of the wetland produced only one crayfish (during the August visit), too small to constitute a sample. Occasional mayfly larvae, cadis fly larvae, amphipods, and isopods were encountered, but were not numerous or large enough to generate a sample.

Only two locations, WBS-4 and the south shoreline near WBS-3, produced sufficient organisms for composite samples. At both locations, zebra mussel and an unidentified species of snail were collected within a very concentrated and defined area of the shoreline; mussels and snails were not observed in any abundance outside of these two limited areas. The width of the shells of the zebra mussels were generally less than 10 mm, and the length of the spiral of the snails was typically less than 6 mm. The shells of both species were thin and fragile. The sample homogenate was prepared from the whole organisms including the shell. The composite samples of approximately 5 g typically consisted of 30-40 mussels or 55-65 snails.

3.1.3 Other Observations of Vertebrate Wildlife

Numerous observations of great blue heron, green heron, and American egret feeding and roosting in the shallows were made during the three sampling events. Osprey were also observed during all three sampling events; during the last event, an osprey was observed capturing what appeared to be a bass in the vicinity of WBS-3. An active beaver den and

beaver were observed along the shoreline in the vicinity of the cove (WBS-2). A number of large carp were observed during the second and third sampling events within the cove during high tide.

3.2 TISSUE CONTAMINANT DATA

3.2.1 Fish Tissue

The analytical results from the tissue analyses reported in wet weight are provided in Appendix F and summarized in Table 1. Nickel was below detection (0.34 mg/kg) in all but one fish tissue sample; one spottail shiner sample from FSA-1 was reported at 0.36 mg/kg. The concentrations of arsenic, cadmium, chromium, copper, lead, nickel, and zinc in edible portion filet samples from largemouth bass and smallmouth bass were generally reported with either a "U" and/or "J" qualifier; that is, either not detected or estimated concentration between the Method Detection Limit and the Reporting Limit. Mercury was the only metal in the validated dataset that was above the reporting limit. Mercury in largemouth bass filets ranged from 0.074 to 0.410 mg/kg in area FSA-1 and from 0.062 to 0.600 mg/kg from FSA-2. Smallmouth bass filets from FSA-1 had mercury concentrations between 0.090 and 0.340 mg/kg.

For most whole body samples (spottail shiner, banded killifish, and tessellated darter), the concentrations of arsenic, cadmium, chromium, copper, lead, and nickel were reported with a "U" or "J" qualifier. The zinc results for one batch of 14 spottail shiner whole body samples was rejected during data validation because of low recoveries (-3.1-12.9 percent) for the associated matrix spike/matrix spike duplicate sample. Of the other 17 samples, lead concentrations were between 22 and 48 mg/kg except for one sample reported at 78 mg/kg with a "J" qualifier. Mercury concentrations ranged from 0.016 to 0.067 mg/kg for the whole body forage fish samples. The reported mercury concentrations for banded killifish, tessellated darter, and most of the spottail shiners from FSA-2 were listed with a "J" qualifier.

3.2.2 Invertebrate Tissue (*Note: Invertebrate analytical results have not completed the data validation process*)

Concentrations of arsenic, cadmium, chromium, copper, lead, and nickel were generally lower in the mollusks (zebra mussel and snails) than in the fish. Mercury concentrations were typically lower in the invertebrate samples (0.0060-0.0230 mg/kg) than in the fish (0.0160-0.6000 mg/kg). Zinc concentrations in the invertebrate samples (5.4-25.0 mg/kg) were generally lower than in the whole body forage fish samples (18.0-78.0 mg/kg), but higher than the fish filet samples (5.3-11.0 mg/kg).

3.2.3 Statistical Comparison among Stations and Taxa

Fisher's least significant difference test was used to compare chemical concentrations among sample locations for each taxa. Results of the station location comparisons were used to determine if data from different locations could be lumped for purposes of comparing chemical concentration among taxa. Comparisons among taxa were then performed. Because the

distributions of chemical concentrations were non-normal, the least significant difference tests were computed on the data ranks rather than the data scores as described by Conover and Iman (1979), and Iman (1982). All statistical tests were done using the SAS Institute, Inc. (2001) statistical software Version 8.02 with a comparison-wise Type I error rate of $\alpha = 0.05$.

Comparisons by species indicated no significant difference between sampling stations (FSA-1 versus FSA-2; WBS-3 versus WBS-4) in the tissue concentration of metal contaminants (Table 2). Consequently, tissue concentration data from the different sampling stations were combined to test for differences among species.

Comparison among species (Table 3 and Figure 4) indicated considerable variability among taxon. The taxa distributed into three groups based on percent solids: invertebrates were highest, the bass species were lowest, and the forage fish species were grouped intermediate. The invertebrates generally had higher metal tissue concentrations than fish for arsenic, cadmium, copper, lead, and nickel (Table 1). Forage fish generally had higher concentrations of zinc and bass had higher concentrations of mercury. There was considerable statistical overlap among trophic groups (invertebrates, forage fish, and top predators) based on tissue concentrations of the eight metals; although some similarities among the sampled taxa were noted. The invertebrates were grouped together statistically (Table 3 and Figure 4) for cadmium, nickel, and lead; the two bass species were grouped together for copper and lead. All the fish species grouped together for nickel and the three forage fish species grouped together for copper, lead, and zinc.

4. REFERENCES

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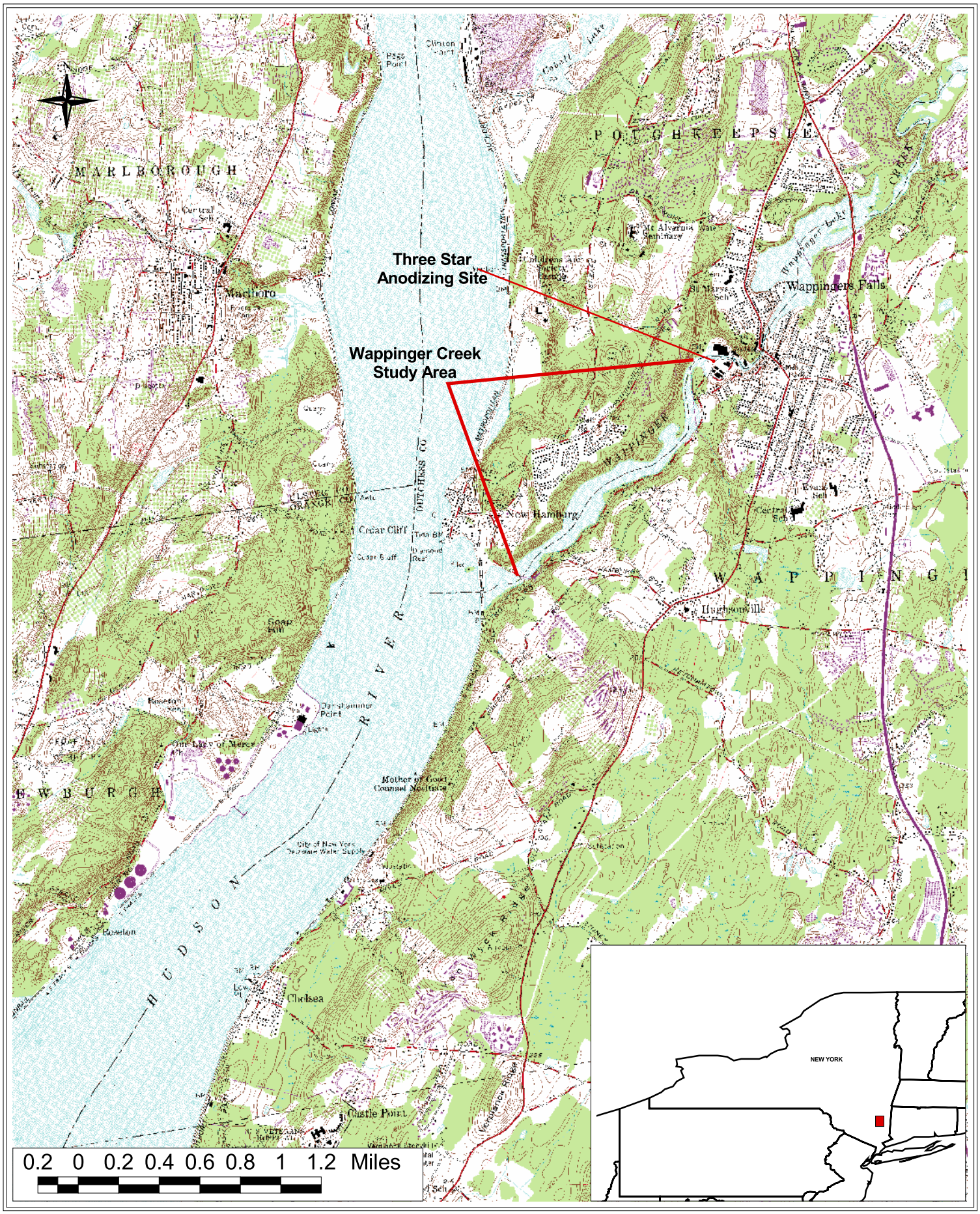

Figure 1. Location map showing Wappinger Creek study area and Three Star Anodizing site.

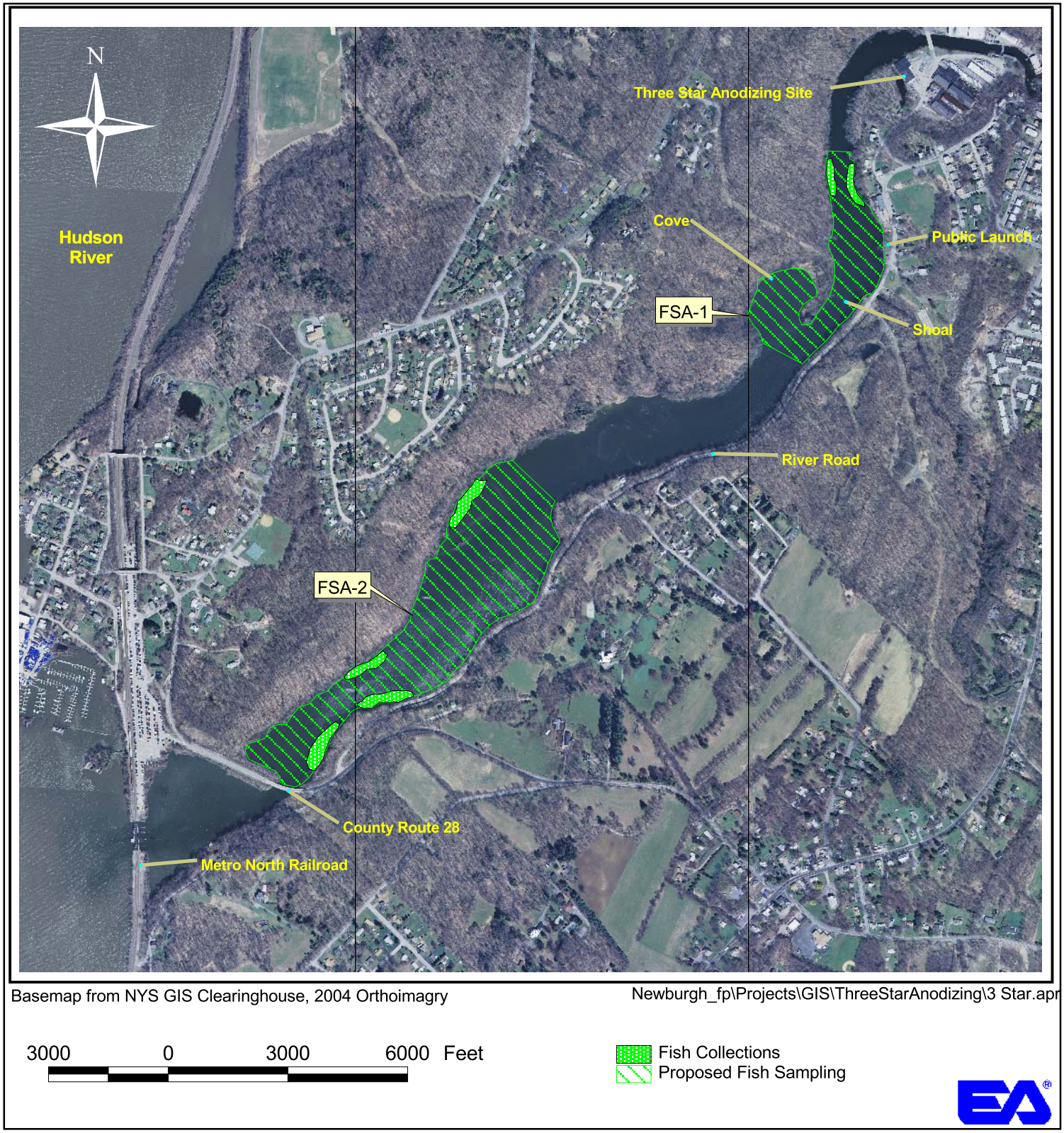

Figure 2. Location of sampling zones and fish collections in Wappinger Creek below Three Star Anodizing site, May 2007.

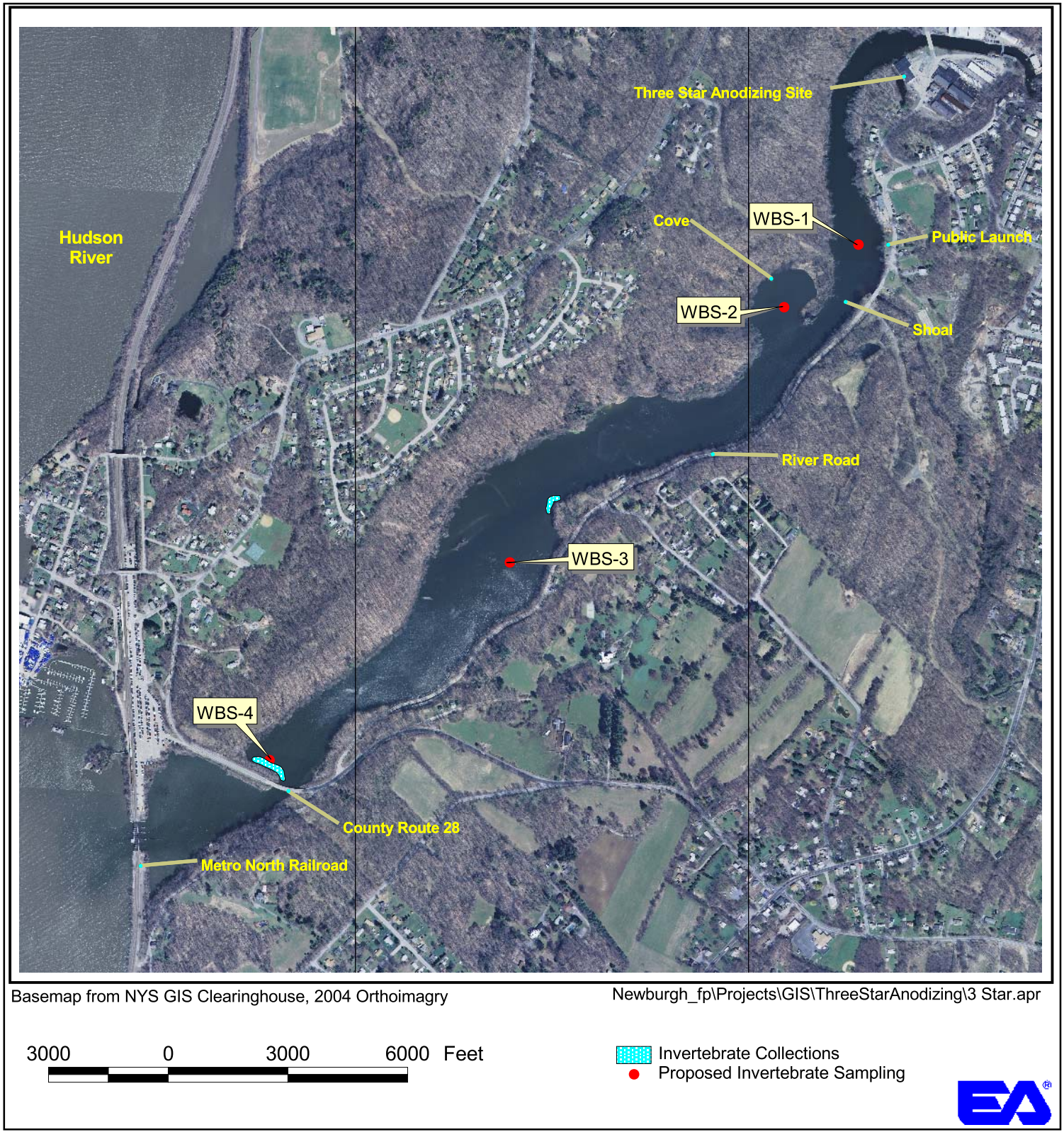

Figure 3. Location of sampling stations and invertebrate collections in Wappinger Creek below Three Star Anodizing site, May 2007.

Figure 4. Summary of Taxon Groups Indicated by Statistical Analysis of Differences in Tissue Metal Concentrations Among Taxon Collected from Wappinger Creek Below the Three Star Anodizing Site, 2007.

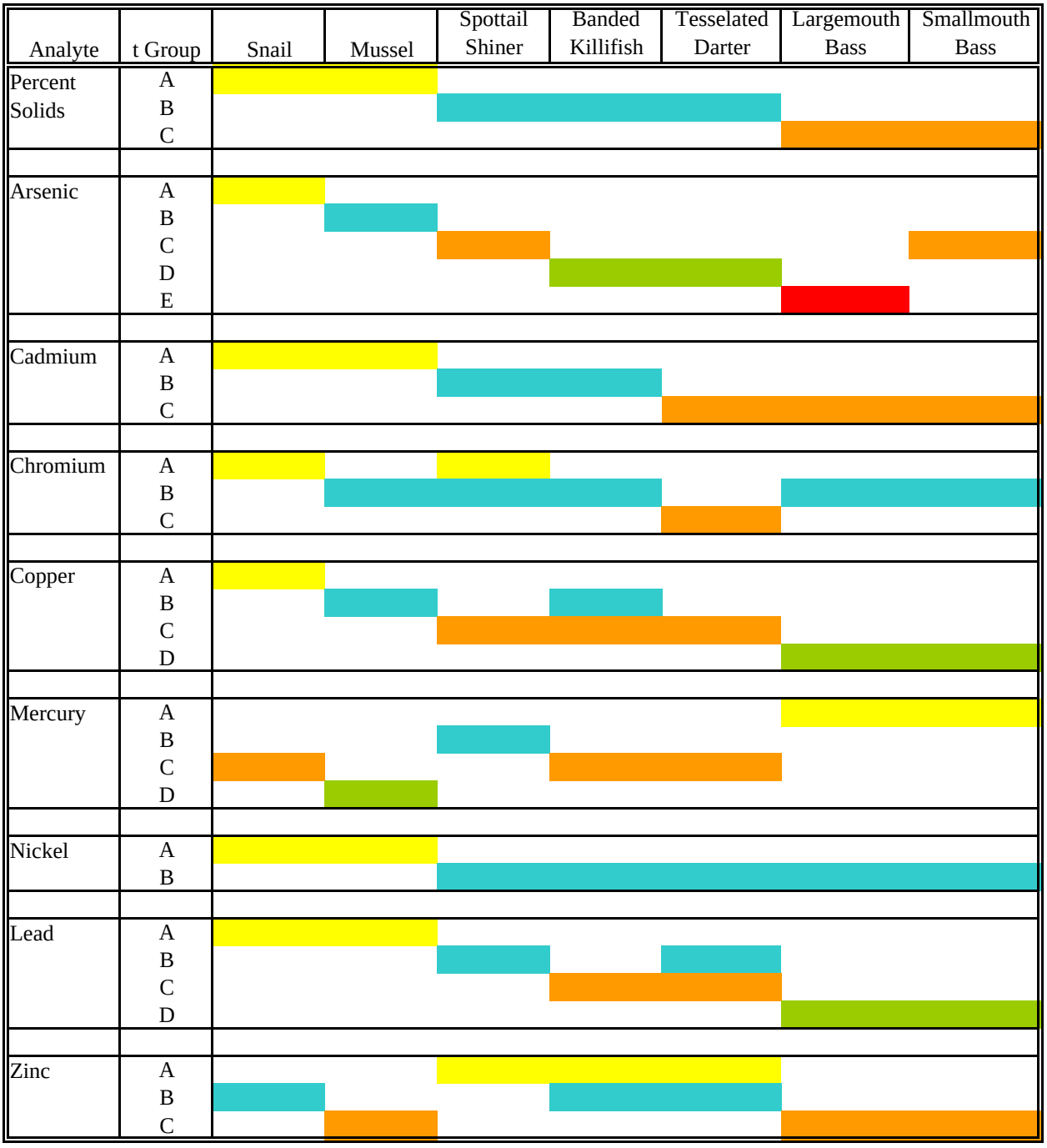

TABLE 1 SUMMARY OF ANALYTICAL RESULTS FOR METAL CONCENTRATION IN FISH AND INVERTEBRATE TISSUE COLLECTED FROM THE TIDAL REACH OF WAPPINGER CREEK, BELOW THE THREE STAR ANODIZING SITE, MAY-AUGUST 2007

Location	Taxon	No. of Samples	Statistic	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Percent Solids
FSA-1	Largemouth bass	12	Mean	0.039	0.0094	0.23	0.25	0.024	0.1596	0.34	7.01	20.3
			Min	0.025	0.0081	0.21	0.19	0.024	0.0740	0.34	5.30	19.0
			Max	0.066	0.0200	0.24	0.41	0.024	0.4100	0.34	9.20	21.3
			Std Dev	0.013	0.0034	0.01	0.06	0.000	0.0968	0.00	1.15	0.8
FSA-2	Largemouth bass	16	Mean	0.036	0.0095	0.21	0.24	0.024	0.2403	0.34	7.99	20.0
			Min	0.018	0.0081	0.19	0.05	0.024	0.0620	0.34	5.40	18.2
			Max	0.053	0.0200	0.24	0.44	0.024	0.6000	0.34	11.00	22.0
			Std Dev	0.010	0.0039	0.01	0.08	0.000	0.1813	0.00	1.67	1.0
FSA-1	Smallmouth bass	4	Mean	0.141	0.0081	0.21	0.29	0.024	0.1975	0.34	6.13	20.4
			Min	0.095	0.0081	0.19	0.25	0.024	0.0900	0.34	5.60	18.7
			Max	0.180	0.0081	0.22	0.36	0.024	0.3400	0.34	6.40	21.6
			Std Dev	0.040	0.0000	0.01	0.05	0.000	0.1118	0.00	0.36	1.3
FSA-1	Spottail shiner	16	Mean	0.097	0.0304	0.28	0.67	0.186	0.0368	0.34	35.19	24.5
			Min	0.066	0.0100	0.19	0.06	0.044	0.0230	0.34	18.00	22.1
			Max	0.160	0.1100	0.62	1.40	0.700	0.0490	0.36	78.00	28.1
			Std Dev	0.028	0.0248	0.10	0.28	0.164	0.0073	0.00	16.64	1.6
FSA-2	Spottail shiner	8	Mean	0.101	0.0240	0.26	0.86	0.201	0.0401	0.34	32.63	24.4
			Min	0.067	0.0090	0.17	0.50	0.049	0.0160	0.34	25.00	22.8
			Max	0.210	0.0620	0.45	3.10	0.480	0.0670	0.34	41.00	26.1
			Std Dev	0.048	0.0162	0.09	0.91	0.153	0.0183	0.00	6.44	1.2
FSA-2	Banded killifish	6	Mean	0.062	0.0198	0.21	1.01	0.076	0.0172	0.34	29.83	22.9
			Min	0.052	0.0100	0.18	0.71	0.031	0.0160	0.34	26.00	20.7
			Max	0.073	0.0350	0.24	1.60	0.110	0.0190	0.34	34.00	24.1
			Std Dev	0.008	0.0105	0.02	0.32	0.031	0.0010	0.00	3.71	1.3
FSA-2	Tessellated darter	2	Mean	0.059	0.0081	0.18	0.57	0.079	0.0195	0.34	26.50	24.5
			Min	0.048	0.0081	0.17	0.54	0.063	0.0170	0.34	22.00	23.9
			Max	0.070	0.0081	0.19	0.59	0.094	0.0220	0.34	31.00	25.1
			Std Dev	0.016	0.0000	0.01	0.04	0.022	0.0035	0.00	6.36	0.8

Location	Taxon	No. of Samples	Statistic	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Percent Solids
WBS-3	Mussel	6	Mean	0.280	0.0803	0.30	3.28	0.837	0.0080	14.23	7.30	39.1
			Min	0.250	0.0640	0.16	1.40	0.220	0.0062	1.80	5.40	27.2
			Max	0.360	0.0970	0.70	7.70	1.800	0.0110	39.00	12.00	59.3
			Std Dev	0.041	0.0137	0.20	2.72	0.685	0.0018	17.43	2.51	10.9
WBS-4	Mussel	1	Value	0.270	0.0590	0.39	1.60	0.370	0.0060	20.00	5.40	43.3
WBS-3	Snail	6	Mean	0.387	0.0735	0.36	29.00	1.007	0.0167	6.93	16.33	34.1
			Min	0.330	0.0590	0.24	17.00	0.610	0.0120	1.40	12.00	30.1
			Max	0.510	0.1000	0.67	56.00	1.600	0.0230	24.00	25.00	39.7
			Std Dev	0.064	0.0147	0.16	13.68	0.434	0.0039	8.76	4.50	3.4
WBS-4	Snail	1	Value	0.340	0.0620	0.42	20.00	0.670	0.0170	58.00	15.00	46.9

TABLE 2 STATISTICAL COMPARISON OF METAL CONCENTRATION IN TISSUE OF FISH AND INVERTEBRATES BETWEEN SAMPLING LOCATIONS IN WAPPINGER CREEK BELOW THE THREE STAR ANODIZING SITE, 2007

Taxon	Chemical	Location	Median	t Grouping
Largemouth bass	Percent Solids	FSA-1	20.5	A
		FSA-2	20	A
	Arsenic	FSA-1	0.038	A
		FSA-2	0.032	A
	Cadmium	FSA-1	<DL	A
		FSA-2	<DL	A
	Chromium	FSA-1	0.23	A
		FSA-2	0.21	B
	Copper	FSA-2	0.24	A
		FSA-1	0.23	A
	Mercury	FSA-2	0.15	A
		FSA-1	0.12	A
	Nickel	FSA-1	<DL	A
		FSA-2	<DL	A
	Lead	FSA-1	<DL	A
		FSA-2	<DL	A
	Zinc	FSA-2	7.7	A
		FSA-1	6.9	A
Mussel	Percent Solids	WBS-4	43.3	A
		WBS-3	35.85	A
	Arsenic	WBS-4	0.27	A
		WBS-3	0.26	A
	Cadmium	WBS-3	0.0775	A
		WBS-4	0.059	A
	Chromium	WBS-4	0.39	A
		WBS-3	0.225	A
	Copper	WBS-3	1.7	A
		WBS-4	1.6	A
	Mercury	WBS-3	0.00765	A
		WBS-4	0.006	A
	Nickel	WBS-4	20	A
		WBS-3	4.35	A
	Lead	WBS-3	0.73	A
		WBS-4	0.37	A
	Zinc	WBS-3	6.5	A
		WBS-4	5.4	A

Taxon	Chemical	Location	Median	t Grouping
Snail	Percent Solids	WBS-4	46.9	A
		WBS-3	33.4	A
	Arsenic	WBS-3	0.37	A
		WBS-4	0.34	A
	Cadmium	WBS-3	0.0725	A
		WBS-4	0.062	A
	Chromium	WBS-4	0.42	A
		WBS-3	0.31	A
	Copper	WBS-3	25	A
		WBS-4	20	A
	Mercury	WBS-3	0.017	A
		WBS-4	0.017	A
	Nickel	WBS-4	58	A
		WBS-3	3.45	A
	Lead	WBS-3	0.845	A
		WBS-4	0.67	A
	Zinc	WBS-3	15.5	A
		WBS-4	15	A
Spottail shiner	Percent Solids	FSA-2	24.8	A
		FSA-1	24.25	A
	Arsenic	FSA-1	0.084	A
		FSA-2	0.079	A
	Cadmium	FSA-1	0.021	A
		FSA-2	0.02	A
	Chromium	FSA-1	0.265	A
		FSA-2	0.23	A
	Copper	FSA-1	0.635	A
		FSA-2	0.525	A
	Mercury	FSA-2	0.04	A
		FSA-1	0.0355	A
	Nickel	FSA-2	<DL	A
		FSA-1	<DL	A
	Lead	FSA-2	0.145	A
		FSA-1	0.135	A
	Zinc	FSA-2	32.5	A
		FSA-1	31.5	A

TABLE 3 STATISTICAL COMPARISON OF METAL CONCENTRATION IN TISSUE OF FISH AND INVERTEBRATES AMONG TAXA COLLECTED FROM WAPPINGER CREEK BELOW THE THREE STAR ANODIZING SITE, 2007

Chemical	Taxon	Median	t Grouping
Percent Solids	Mussel	36.3	A
	Snail	34.6	A
	Spottail shiner	24.6	B
	Tessellated darter	24.5	B
	Banded killifish	23.35	B
	Smallmouth bass	20.7	C
	Largemouth bass	20	C
Arsenic	Snail	0.36	A
	Mussel	0.26	B
	Smallmouth bass	0.145	C
	Spottail shiner	0.0825	C
	Banded killifish	0.0615	D
	Tessellated darter	0.059	D
	Largemouth bass	0.0345	E
Cadmium	Mussel	0.074	A
	Snail	0.071	A
	Spottail shiner	0.02	B
	Banded killifish	0.0155	B
	Smallmouth bass	<DL	C
	Tessellated darter	<DL	C
	Largemouth bass	<DL	C
Chromium	Snail	0.32	A
	Spottail shiner	0.255	A B
	Mussel	0.25	B
	Largemouth bass	0.22	B
	Banded killifish	0.215	B
	Smallmouth bass	0.215	B
	Tessellated darter	0.18	C
Copper	Snail	24	A
	Mussel	1.6	B
	Banded killifish	0.905	B C
	Spottail shiner	0.575	C
	Tessellated darter	0.565	C
	Smallmouth bass	0.28	D
	Largemouth bass	0.23	D

Chemical	Taxon	Median	t Grouping
Mercury	Smallmouth bass	0.18	A
	Largemouth bass	0.145	A
	Spottail shiner	0.0355	B
	Tessellated darter	0.0195	C
	Snail	0.017	C
	Banded killifish	0.017	C
	Mussel	0.0073	D
Nickel	Mussel	6.8	A
	Snail	5.4	A
	Smallmouth bass	<DL	B
	Tessellated darter	<DL	B
	Largemouth bass	<DL	B
	Banded killifish	<DL	B
	Spottail shiner	<DL	B
Lead	Snail	0.8	A
	Mussel	0.37	A
	Spottail shiner	0.135	B
	Tessellated darter	0.0785	B C
	Banded killifish	0.071	C
	Smallmouth bass	<DL	D
	Largemouth bass	<DL	D
Zinc	Spottail shiner	31.5	A
	Banded killifish	29.5	A B
	Tessellated darter	26.5	A B
	Snail	15	B
	Largemouth bass	6.9	C
	Smallmouth bass	6.25	C
	Mussel	5.8	C

Appendix A

Completed Field Data Forms

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [X] FSA-1 [ ] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign) R. Ballentine, Brian Andersen, David Crandall

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05/07-FSA-1-LMB-F.01	Micropterus salmoides	5-1-07 ~~5-1-07~~ BA	Electro shock	368	822.2	
TSAWC-05/07-FSA-1-LMB-F-02	Micropterus salmoides	5-1-07	Electro shock	336	624.1	
TSAWC-05/07-FSA-1-LMB-F-03	Micropterus salmoides	5-1-07	Electro shock	364	747.6	
TSAWC-05/07-FSA-1-LMB-F-04	Micropterus salmoides	5-1-07	Electro shock	465	1819.1	~~sore~~ sore on lower mandible
TSAWC-05/07-FSA-1-LMB-F-05	Micropterus salmoides	5-1-07	Electro shock	390	893.4	sore on lower mandible

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [X] FSA-1 [ ] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05107-FSA	micropterus	5-1-07	Electroshock	410	1018.4	PRIMR / DUP
1-LMB-F06	salmoides					
TSAWC-05107-FSA	micropterus	5-1-07	Electroshock	341	657.8	
1-LMB-F07	salmoides					
TSAWC-05107-FSA	micropterus	5-1-07	Electroshock	289	331.4	
1-LMB-F08	salmoides					
TSAWC-05107-FSA	micropterus	5-1-07	Electroshock	284	278.5	
1-LMB-F09	salmoides					
TSAWC-05107-FSA	micropterus	5-1-07	Electroshock	278	293.7	
1-LMB-F10	salmoides.					

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [X] FSA-1 [ ] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign)

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	269	416.2	
1-LMB-~~05/07~~ F11	salmoides					
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	260	216.9	NOT SENT FOR ANAL.
1-LMB-F12	salmoides					
~~TSAWC-05/07-FSA~~	~~Micropterus~~	~~5-1-07~~	~~Electroshock~~	489 ~~370~~ BK	~~2,125.0~~	~~MS/MSD~~ VOID
~~+LMB-F13~~	~~salmoides~~					
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	407	970.2	
1-SMB-F01	dolomieu					
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	406	998.7	
1-SMB-F02	dolomieu					

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [X] FSA-1 [ ] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	402	1002.8	
1-SMB-F03	dolomieu					
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock.	344	424.4	ulceration/Lesion
1-SMB-F04	dolomieu					Lower Body
~~TSAWC-05/07-FSA~~						
~~1-SMB-F05~~						

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [ ] FSA-1 [X] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	440	1597.2	
2-LMB-06	salmoides					
TSAWC-05/07	Micropterus	5-1-07	Electroshock.	419	1047.8	ulcer lower jaw'
2-LMB-01	salmoides					
TSAWC-05/07-FSA	micropterus	5-1-07	Electroshock.	412	1094.7	
2-LMB-02	salmoides					
TSA WC-05/07-FSA	micropterus	5-1-07	Electroshock.	447	1577.5	
2-LMB-03	salmoides					
TSA WC-05/07-FSA	micropterus	5-1-07	Electroshock	350	612.3	
2-LMB-04	salmoides.					

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [ ] FSA-1 [X] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign)

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05/07-FSA	Micropterus	5-1-07	Electroshock	296.	378.3	
2-LMB-05	salmoides					
TSAWC-05/07-FSA	micropterus	5-1-07	Electroshock	375.	792.6	
2-LMB-07	salmoides					
TSAWC-05/07-FSA	micropterus	5-1-07	Electroshock	391	909.9	
2-LMB-08	salmoides					
TSAWC-05/07-FSA	micropterus	5-1-07	Electroshock	498	72000	PRIME/DUP
2-LMB-09	salmoides				(2125)	
TSAWC-05/07-FSA	micropterus	5-2-07	Electroshock	335	558.4	
2-LMB-10	salmoides					

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [ ] FSA-1 [X] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, (Gill net), Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign) Brian Andersen
Brian Anderson

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-05107-FSA	micropterus	5-2-07	Electroshock.	318	501.2	
2-LMB-11	Salmoides					
TSAWC-05107-FSA	micropterus	5-2-07	Electroshock.	324	489.9	
2-LMB-12	salmoides.					
TSAWC-05107FSA	micropterus	5-2-07	Electroshock	407	1218.5	small wound - Left Jaw
2-LMB-13	salmoides					
TSAWC-05107-FSA	micropterus	5-2-07	Electroshock.	435	1343.7	
2-LMB-14	salmoides					
TSAWC-05107-FSA	micropterus	~~5-2-07~~	~~Electroshock~~	509	~~2600.0~~	MS/MSD
2-LMB-15	Salmoides	5-3-07	Gill Net (DC)			

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): Brian Andersen Rob Ballantine David Caudall
(Print and sign) Brian Andersen — —

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSAWC-05167-FSA-1-SS-W-01 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	108	11.6	016			031		
002	115	14.2	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities):
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA - 1-55-W-02 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	100	9.2	016			031		
002	107	12.7	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [ ] Other: _____

Composite Sample # FSAWC-05107-FSA-1-35-W-03 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	106	11.1	016			031		
002	104	10.3	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-01-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA
1-55-W-04 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	103	11.2	016			031		
002	115	15.1	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

MSIMSD

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA 1-55-W-05 Number of Individuals: 6

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	102	9.5	016			031		
002	104	10.9	017			032		
003	105	10.9	018			033		
004	103	9.5	019			034		
005	107	12.4	020			035		
006	96	8.0	021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA 1-55-W-06 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	98	8.8	016			031		
002	106	11.3	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method:
[ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)
_____

FINFISH/SHELLFISH COLLECTED

Species Name:
[ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07 - FSA 1-55-W-07- Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	102	9.8	016			031		
002	110	11.2	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample #TSAWL-05/07-FSA-1-SS-W-08 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	105	9.6	016			031		
002	107	10.3	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAW C-05/07-FSA 1-SS-W-09 Number of Individuals: 3

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	99	7.9	016			031		
002	107	11.2	017			032		
003	102	9.8	018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method:
[ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA 1-55-W-0010DC Number of Individuals: 3

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	95	5.3	016			031		
002	110	11.0	017			032		
003	94	7.1	018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA Number of Individuals: 2
1-SS-W-0911DC

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	110	12.2	016			031		
002	105	9.4	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA Number of Individuals: 2
1553-1712.DC

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	105	10.2	016			031		
002	99	9.0	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method:
[ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name:
[ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05107-FSA 1-55-13 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	102	8.8	016			031		
002	99	8.4	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-1-SS-14 Number of Individuals: 3

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	103	9.9	016			031		
002	104	8.6	017			032		
003	101	9.2	018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA 1-55-15 DUP Number of Individuals: 4

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	112	14.7	016			031		
002	106	11.8	017			032		
003	105	10.3	018			033		
004	100	9.2	019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSH-2-SS-01 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	100	10.3	016			031		
002	82	5.2	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA-2-55-02 Duplicate Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	114	14.6	016			031		
002	112	11.5	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA-2-55-03. Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	99	8.9	016			031		
002	107	12.9	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 2-55-04 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	109	13.2	016			031		
002	109	11.6	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-01

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/07-FSA 2-55-05 Number of Individuals: 2

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	107	12.7	016			031		
002	105	11.0	017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[X] ~~Electrofishing~~ DC [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSPWC-05/07-FSA 2-55-06 Number of Individuals: 3

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	81	5.1	016			031		
002	76	3.7	017			032		
003	87	5.8	018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-3-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method:
[ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)
_____

FINFISH/SHELLFISH COLLECTED

Species Name:
[ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other: _____

Composite Sample # TSAWC-05/04-FSA-2-55-08 Number of Individuals: 1

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	105	11.1	016			031		
002			017			032		
003			018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: BANDED KILLIFISH

Composite Sample #TSAWC-05/07-FSA-2=BKF=01 Number of Individuals: _____

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	43	0.8	016			031		
002	45	0.4	017			032		
003	35	0.4	018			033		
004	51	1.3	019			034		
005	46	1.1	020			035		
006	45	0.3	021			036		
007	45	0.9	022			037		
008	47	1.3	023			038		
009	48	1.1	024			039		
010	49	1.1	025			040		
011	47	1.0	026			041		
012	40	0.7	027			042		
013	35	0.5	028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: BANDED killifish

Composite Sample # TSAW-05/07-FSA-2-BKF-02 Number of Individuals: 3

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	84	5.3	016			031		
002	57	2.0	017			032		
003	64	2.1	018			033		
004			019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-3-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded killifish (Fundulus diaphanus)

Composite Sample # TSAW-05/07-FSA-2-BKF-03 / MS/MSD Number of Individuals: 26

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	41	1.0	016	62	2.2	031		
002	57	1.8	017	48	1.3	032		
003	58	1.4	018	54	1.6	033		
004	58	1.4	019	47	1.0	034		
005	55	1.2	020	48	1.1	035		
006	64	2.4	021	53	1.3	036		
007	50	1.1	022	42	0.7	037		
008	61	2.1	023	40	0.7	038		
009	52	1.2	024	41	0.6	039		
010	47	0.9	025	38	0.3	040		
011	39	0.5	026	37	0.3	041		
012	34	0.3	027			042		
013	51	1.2	028			043		
014	56	1.6	029			044		
015	55	1.7	030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-3-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded killifish

Composite Sample # TSAWC-05/07-FSA-2-BKF-04 Number of Individuals: 6

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	57	1.5	016			031		
002	56	1.3	017			032		
003	57	1.7	018			033		
004	51	1.3	019			034		
005	63	2.3	020			035		
006	63	2.0	021			036		
007	L		022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-3-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded Killifish

Composite Sample # TSAWC-05/07-FSA-2-BKF-05 ~~DUP~~ Number of Individuals: 24

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	45	0.8	016	44	0.8	031		
002	50	1.3	017	37	0.3	032		
003	49	0.9	018	45	0.8	033		
004	40	0.8	019	43	0.6	034		
005	64	2.0	020	38	0.5	035		
006	48	0.8	021	42	0.6	036		
007	50	1.0	022	41	0.5	037		
008	42	0.7	023	30	0.3	038		
009	39	0.8	024	34	0.3	039		
010	52	0.9	025			040		
011	43	0.6	026			041		
012	49	1.1	027			042		
013	55	1.3	028			043		
014	47	0.9	029			044		
015	41	0.6	030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-3-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Electrofishing [X] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

Collector(s) Name(s): (Print and sign) _____

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Spottail Shiner [ ] Odonates [X] Other: Banded Killifish

Composite Sample # TSAWC-05/07-FSA-2-BKF-06 Number of Individuals: _____

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	33	0.2	016	31	0.2	031		
002	44	0.9	017	30	0.3	032		
003	42	0.6	018			033		
004	46	0.5	019			034		
005	62	2.1	020			035		
006	46	1.0	021			036		
007	35	0.3	022			037		
008	45	0.8	023			038		
009	44	0.6	024			039		
010	42	0.9	025			040		
011	34	0.7	026			041		
012	40	0.6	027			042		
013	48	0.9	028			043		
014	36	0.5	029			044		
015	37	0.4	030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): (Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Tessalina Darter (Etheostoma olmstedi)

Composite Sample # TSAWC-05107-FSA-2-TD-01 Number of Individuals: 4

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	60	3.0	016			031		
002	54	2.4	017			032		
003	60	1.7	018			033		
004	63	2.6	019			034		
005			020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities):
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 **Sampling Date and Time:** 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

_____

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Tessellated Darter

Composite Sample # TSAWC-05107-FSA-2-TD-02 Number of Individuals: 5

Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)	Individual Sample No.	Length (mm)	Mass (g)
001	51	1.1	016			031		
002	60	2.0	017			032		
003	64	1.4	018			033		
004	57	1.1	019			034		
005	58	1.8	020			035		
006			021			036		
007			022			037		
008			023			038		
009			024			039		
010			025			040		
011			026			041		
012			027			042		
013			028			043		
014			029			044		
015			030			045		

Notes (eg. morphological abnormalities): _____
(use reverse side for more room)

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [X] ~~FSA-1~~ WBS-3 [ ] ~~FSA-2~~ WBS-4

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Andersen
Brian Andersen

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	~~Length~~ (mm)	~~Whole Body~~ Composit Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-06/07-WBS3-MUS-01	Zebra mussels	6/21/07	HAND	NA	5.26	35 mussel < 1/2"
TSAWC-06/07-WBS3-MUS-02	Zebra mussels	6/21/07	HAND	NA	~~5.0~~ 4.98 PHM	32 mussels < 1/2"
TSAWC-06/07-WBS3-MUS-03	Zebra mussels	6/21/07	HAND	NA	5.35	38 mussels < 1/2
TSAWC-06/07-WBS3-SNL-01	Snail	6/21/07	HAND	NA	5.08	57 snails < 1/4"
TSAWC-06/07-WBS3-SNL-02	Snail	6/21/07	HAND	NA	5.29	62 snails < 1/4"

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] ~~FSA-1~~ WBS3 [ ] ~~FSA-2~~ WBS-4

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Andersen, Brian Andersen

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	~~Whole Body~~ Mass (g) Composite	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-06/07-	Snail	6/21/07	HAND	NA	5.65	59 snails <1/4"
WBS3 - SUL-03						

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] ~~FSA-1~~ (WBS-3) [X] ~~FSA-2~~ (WBS-4)

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) — HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Anderson, Brian Cunderson

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	~~Whole~~ Body Mass (g) Composite	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-06/07-WBS4-MUS-01	Zebra Mussels	6/21/07	HAND	NA	5.10	31 mussels < 1/2"
TSAWC-06/07-WBS4-SNL-01	Snail	6/21/07	HAND	NA	5.09	57 snails < 1/4"

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY **Station:** ~~[ ] FSA-1 [ ] FSA-2~~ WRS-3

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND / DIPNET

Collector(s) Name(s): (Print and sign) PAUL H. MUESSIG

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSAWC-08/07-WR3						
SNL-04	SNAIL	8/29/07	HAND	—	5.13	58 snails < 1/4"
TSAWC-08/07-WR3						
SNL-05	SNAIL	8/29/07	HAND	—	5.17	55 snails < 1/4"
TSAWC-08/07-WR3						
SNL-06	SNAIL	8/29/07	HAND	—	6.62	65 snails < 1/4"
TSAWC-08/07-WR3						
MUS-04	ZEBRA MUSSEL	8/29/07	HAND	—	5.14	34 mussels < 3/8"
TSAWC-08/07-WR3						
MUS-05	ZEBRA MUSSEL	8/29/07	HAND	—	5.00	37 mussels < 3/8"

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY Station: [ ] ~~ESA-1~~ [ ] ~~FSA-2~~ WSB -3

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): (Print and sign) PAUL H. MUESSIG

FINFISH/SHELLFISH COLLECTED

Sample No	Species	Sample Date	Collection Method	Length (mm)	Whole Body Mass (g)	Remarks (e.g. morphological abnormalities, use reverse side for more room)
TSDWC-08/07-WR3						
MUS-06	ZEBRA MUSSEL	8/29/07	HAND	✓	4.23	32 MUSSELS < 3/8"

Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

Appendix B

Chain-of-Custody Forms

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

COC No. 017004

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	EA Engineering
Branch/Location:	Newburgh
Project Contact:	Paul Muessig
Phone:	845-565-8100 x 1006
Project Number:	14368.10
Project Name:	Three Star Amazing
Project State:	New York
Sampled By (Print):	Brian Andersen
Sampled By (Sign):	Brian Andersen
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSAWC-05/07-FSA-1-LMB-F-01	5/1/07		B		A	X	See Right Filter for all Analysis Samples		
	TSAWC-05/07-FSA-1-LMB-F-02	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-03	5/1/07		B		A	X	MS/MSD-EA		
	TSAWC-05/07-FSA-1-LMB-F-04	5/1/07		B		A	X	MS/MSD-Use left Sample		
	TSAWC-05/07-FSA-1-LMB-F-05	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-06	5/1/07		B		A	X	Duplicate-Use Left Filter		
	TSAWC-05/07-FSA-1-LMB-F-07	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-08	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-09	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-10	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-11	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-LMB-F-12	5/1/07		B			No Sample Rec			
	TSAWC-05/07-FSA-1-LMB-F-13	5/1/07		B			No Sample Rec			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	5/7/07 1340		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
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CHAIN OF CUSTODY

COC No. 017005

(Please Print Clearly)	
Company Name:	EA Engineering
Branch/Location:	Newburgh
Project Contact:	Paul Mueslig
Phone:	845-565-4105 x 1006
Project Number:	14368.18
Project Name:	Three Star Anodizing
Project State:	New York
Sampled By (Print):	Brian Andersen
Sampled By (Sign):	Brian Andersen
PO #:	Regulatory Program:

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: As, Cd, Cr, Cu, Pb, Ni, NO3, ZnO	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSAWC-05/07-FSA-1-SMB-F-01	5/1/07		B		A	X	Use Highlighted for matching sample		
	TSAWC-05/07-FSA-1-SMB-F-02	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-SMB-F-03	5/1/07		B		A	X			
	TSAWC-05/07-FSA-1-SMB-F-04	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-01	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-02	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-03	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-04	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-05	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-06	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-07	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-08	5/1/07		B		A	X			
	TSAWC-05/07-FSA-2-LMB-F-09	5/1/07		B		A	X	Duplicate - use Left Side		

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: Paul Mueslig	Date/Time: 5/7/07 1340	Received By: / Date/Time:
Transmit Prelim Rush Results by (complete what you want):	Relinquished By:	Date/Time:	Received By: / Date/Time:
Email #1:	Relinquished By:	Date/Time:	Received By: / Date/Time:
Email #2:	Relinquished By:	Date/Time:	Received By: / Date/Time:
Telephone:	Relinquished By:	Date/Time:	Received By: / Date/Time:
Fax:	Relinquished By:	Date/Time:	Received By: / Date/Time:

Samples on HOLD are subject to special pricing and release of liability

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

UPPER MIDWEST REGION
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COC No. 017006

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	EA Engineering
Branch/Location:	Newburgh
Project Contact:	Paul Mussig
Phone:	845-565-8100 x 1006
Project Number:	14368.10
Project Name:	Three Star Anodizing
Project State:	New York
Sampled By (Print):	Brian Anderson
Sampled By (Sign):	Brian Anderson
PO #:	Regulatory Program:

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
	TSAWC-05/07-FSA-2-LMA-E-10	5/2/07		B	N	A	X	Use right label for composite sample	
	TSAWC-05/07-FSA-2-LMA-E-11	5/2/07		B	N	A	X		
	TSAWC-05/07-FSA-3-LMA-E-12	5/2/07		B	N	A	X		
	TSAWC-05/07-FSA-3-LMA-E-13	5/2/07		B	N	A	X		
	TSAWC-05/07-FSA-3-LMA-E-13	5/2/07		B	N	A	X		
	TSAWC-05/07-FSA-3-LMA-E-14	5/2/07		B	N	A	X		
	TSAWC-05/07-FSA-3-LMA-E-15	5/3/07		B	N	A	X	MS/MSD Yes/No	
	TSAWC-05/07-FSA-1-SS-W-01	5/1/07		B	N	A	X		
	TSAWC-05/07-FSA-1-SS-W-02	5/1/07		B	N	A	X		
	TSAWC-05/07-FSA-1-SS-W-03	5/1/07		B	N	A	X		
	TSAWC-05/07-FSA-1-SS-W-04	5/1/07		B	N	A	X		
	TSAWC-05/07-FSA-1-SS-W-05	5/1/07		B	N	A	X	MS/MSD	
	TSAWC-05/07-FSA-1-SS-W-06	5/1/07		B	N	A	X		

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Profile #:

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	5/7/07 1340		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

UPPER MIDWEST REGION
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CHAIN OF CUSTODY

COC No. 017007

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	FA Engineering
Branch/Location:	Newburgh
Project Contact:	Paul Muessig
Phone:	845-565-8100 x 1006
Project Number:	14368.10
Project Name:	ThreeStar Anodizing
Project State:	New York
Sampled By (Print):	Brian Anderson
Sampled By (Sign):	Brian Anderson
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSAWC-05/07-FSA-1-SS-W-07	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-08	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-09	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-10	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-11	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-12	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-13	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-14	5/1/07		B		X				
	TSAWC-05/07-FSA-1-SS-W-15	5/1/07		B		X		PRIMARY + Duplicate		
	TSAWC-05/07-FSA-2-SS-W-01	5/1/07		B		X				
	TSAWC-05/07-FSA-2-SS-W-02	5/2/07		B		X		PRIMARY + Duplicate		
	TSAWC-05/07-FSA-2-SS-W-03	5/3/07		B		X				
	TSAWC-05/07-FSA-2-SS-W-04	5/3/07		B		X				

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	5/7/07 1340		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

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CHAIN OF CUSTODY

COC No. 017020

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	EA Engineering
Branch/Location:	Newburgh
Project Contact:	Paul Muessig
Phone:	845-565-8100 x 1006
Project Number:	14368.10
Project Name:	Three Star Anodizing
Project State:	New York
Sampled By (Print):	Brian Andersen
Sampled By (Sign):	Brian Andersen
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, TCN	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSA WC-05/07-FSA-2-SS-W-05	5/2/07		B		A	X			
	TSAWC-05/07-FSA-2-SS-W-06	5/2/07		B		A	X			
	TSAWC-05/07-FSA-2-SS-W-03	5/3/07		B		A	X			
	TSAWC-05/07-FSA-2-BKE-W-01	5/2/07		B		A	X			
	TSAWC-05/07-FSA-2-BKE-W-02	5/2/07		B		A	X			
	TSAWC-05/07-FSA-2-BKE-W-03	5/3/07		B		A	X	MS/MSD		
	TSAWC-05/07-FSA-2-BKE-W-04	5/2/07		B		A	X			
	TSAWC-05/07-FSA-2-BKE-W-05	5/3/07		B		A	X			
	TSAWC-05/07-FSA-2-BKE-W-06	5/3/07		B		A	X			
	TSAWC-05/07-FSA-2-TD-W-01	5/3/07		B		A	X			
	TSAWC-05/07-FSA-2-TD-W-02	5/3/07		B		A	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	5/7/07 1340		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

(Please Print Clearly)

Company Name:	EA ENGINEERING
Branch/Location:	NEWBURGH
Project Contact:	PAUL MUESSIG
Phone:	845-565-8100 - EX1006
Project Number:	
Project Name:	THREE STAR - WAPPINGER
Project State:	NY
Sampled By (Print):	PAUL MUESSIG
Sampled By (Sign):	
PO #:	Regulatory Program:

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MN: 612-607-1700 WI: 920-469-2436

COC No. 017132

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	PAUL MUESSIG
Mail To Company:	EA ENGINEERING
Mail To Address:	3 WASHINGTON CENTER NEWBURGH NY 12550
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☑ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: As, Cd, Cr, Cu, Pb, Ni, Hg, 1,2-DCA, EDB	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSAWL-06/07-WBS3-MUS-01	6/14/07	1200	TIS		X		HOLD EXTRA MATERIAL IN EVENT MSD REQUESTS FURTHER ANALYSIS		
	TSAWL-06/07-WBS3-MUS-02	6/14/07	1200	TIS		X				
	TSAWL-06/07-WBS3-MUS-03	6/14/07	1200	TIS		X				
	TSAWL-06/07-WBS3-SWL-01	6/14/07	1200	TIS		X				
	TSAWL-06/07-WBS3-SWL-02	6/14/07	1200	TIS		X				
	TSAWL-06/07-WBS3-SWL-03	6/14/07	1200	TIS		X				
	TSAWL-06/07-WBS4-MUS-01	6/14/07	1500	TIS		X				
	TSAWL-06/07-WBS4-SWL-01	6/14/07	1500	TIS		X				

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	6/25/07 14:30		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

COC No. 017021

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CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	EA ENGINEERING
Branch/Location:	NEWBURGH
Project Contact:	PAUL MUESSIG
Phone:	845-565-8100 EX1006
Project Number:	14386.10 0002
Project Name:	THREE STAR ANODIZING
Project State:	NY
Sampled By (Print):	PAUL MUESSIG
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	PAUL H MUESSIG
Mail To Company:	EA ENGINEERING
Mail To Address:	3 WASHINGTON CENTER NEWBURGH NY 12550
Invoice To Contact:	SAME
Invoice To Company:	
Invoice To Address:	SAME
Invoice To Phone:	

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☒ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

FILTERED? (YES/NO) — Y/N: X
PRESERVATION (CODE)* — Pick Letter: A

Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX			CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	TSAWC-08/07-WB3-SNL-04	8/29/07	0750	B		X	HOLD EXTRA		
	TSAWC-08/07-WB3-SNL-05	8/29/07	0710	B		X	MATERIAL		
	TSAWC-08/07-WB3-SNL-06	8/29/07	0750	B		X	IN EVENT		
	TSAWC-08/07-WB3-MUS-04	8/29/07	0750	B		X	CLIENT		
	TSAWC-08/07-WB3-MUS-05	8/29/07	0750	B		X	(NYSDEC)		
	TSAWC-08/07-WB3-MUS-06	8/29/07	0750	B		X	REQUESTS		
							FURTHER		
							ANALYSES		

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	8/29/07 1545		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Appendix C

Laboratory Data Package
(provided on CD)

Appendix D

Data Usability Summary Report
(provided on CD)

Appendix E

Field Photo Log

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Electrofishing boat used as primary gear for fish collections in Wappinger Creek. Preparing to sample area FSA-1.

Date: 4 May 2007

Comments: Beach seine on sand bar along south shore used for fish collections in FSA-2.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Setting beach seine used for fish collections along north shore in FSA-2.

Date: 4 May 2007

Comments: Experimental multi-panel gill net used for fish collections.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Bass collected by electrofishing in area FSA-2 near County Route 28 bridge.

Date: 4 May 2007

Comments: Measuring length and weight of specimens in field.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Processing, labeling, and data recording in field.

Date: 4 May 2007

Comments: Gravel bar at mouth of tributary to Wappinger Creek downstream of boat launch in area FSA-1.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Looking across peninsula into cove in area FSA-1.

Date: 4 May 2007

Comments: View west (downstream) from boat launch in area FSA-1; gravel bar at tributary visible in middle ground.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: View east (upstream) from boat launch in area FSA-1.

Date: 4 May 2007

Comments: Productive area for fish collections with woody debris along north shore in area FSA-2.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Area FSA-2 upstream of County Route 28 bridge; orange gill net float markers near shore in middle ground.

Date: 4 May 2007

Comments: Sampling in cove (area FSA-1) for invertebrates at low tide.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Cove at low tide with remnants of vegetation from previous growing season.

Date: 4 May 2007

Comments: Bug net used to sample surficial sediment for invertebrates.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Petite ponar dredge and wash pan used to sample for invertebrates.

Date: 4 May 2007

Comments: Sieve bucket used to wash down sediment material used to collect invertebrates

PHOTOGRAPHIC RECORD

Date: 21 June 2007

Comments: Invertebrate sampling area WBS-4 to the north and east of County Route 28 bridge.

Date: 21 June 2007

Comments: Invertebrate sampling area along derelict timber bulkhead adjacent to WBS-3.

PHOTOGRAPHIC RECORD

Date: 21 June 2007

Comments: Invertebrate sampling area along derelict timber bulkhead adjacent to WBS-3.

Date: 21 June 2007

Comments: Cove (WBS-2) with summer vegetation at high tide.

PHOTOGRAPHIC RECORD

Date: 4 May 2007

Comments: Cove (WBS-2) prior to growing season viewed from Wappinger Creek.

Date: 21 June 2007

Comments: Point and timber bulkhead (in middle ground) where invertebrate samples were collected for area WBS-3.

PHOTOGRAPHIC RECORD

Date: 21 June 2007

Comments: Root mass and stems of water chestnut inspected for clinging invertebrates.

Date: 29 August 2007

Comments: Inspecting waterlogged woody debris for invertebrates.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Mud/silt substrate characteristic of intertidal shoreline.

Date: 29 August 2007

Comments: Mud/silt substrate with submerged aquatic vegetation characteristic of intertidal shoreline.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Inspecting stems of emergent aquatic vegetation for invertebrates.

Date: 29 August 2007

Comments: Dense beds of submerged water chestnut which choke all but the deepest portion of the channel of Wappinger Creek during the summer growing season; emergent wetland vegetation in the cove visible at shoreline in middle ground.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Invertebrate sampling location WBS-3 looking toward north shore of Creek; water chestnut beds in background.

Date: 4 May 2007

Comments: Osprey observed in tree near cove.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Beaver swimming from lodge along edge of wetland at cove.

Date: 29 August 2007

Comments: Green heron in middle of photo fishing from woody debris along shoreline.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Great blue heron fishing from woody debris near WBS-4 sampling area.

Date: 21 June 2007

Comments: Great blue heron fishing in cove wetland.

PHOTOGRAPHIC RECORD

Date: 29 August 2007

Comments: Great blue heron fishing near sampling areas WBS-1 and FSA-1.

Appendix F

Summary of Field and Validated Analytical Data

TABLE F-1. VALIDATED RESULTS OF METALS ANALYSES FOR FILETS FROM LARGEMOUTH BASS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Length (mm)	Weight (g)	Field Observations
TSAWC-05/07-FSA-1-LMB-F-01	FSA-1	5/1/2007	Largemouth bass	fillet	0.066 J	0.0090 J	0.22 J	0.30 J	0.024 U	0.0960	0.34 UJ	6.9 U	368	822.2	
TSAWC-05/07-FSA-1-LMB-F-02	FSA-1	5/1/2007	Largemouth bass	fillet	0.040 J	0.0110 J	0.22 J	0.19 J	0.024 U	0.0970	0.34 UJ	6.9 U	336	624.1	
TSAWC-05/07-FSA-1-LMB-F-03	FSA-1	5/1/2007	Largemouth bass	fillet	0.038 J	0.0081 U	0.23 J	0.23 J	0.024 U	0.0880	0.34 UJ	5.3 U	364	747.6	
TSAWC-05/07-FSA-1-LMB-F-04	FSA-1	5/1/2007	Largemouth bass	fillet	0.043 J	0.0200 J	0.24 J	0.22 J	0.024 U	0.2300	0.34 UJ	6.3 U	465	1819.1	sore on mandible
TSAWC-05/07-FSA-1-LMB-F-05	FSA-1	5/1/2007	Largemouth bass	fillet	0.028 J	0.0081 U	0.23 J	0.32 J	0.024 U	0.1500	0.34 UJ	6.1 U	390	893.4	sore on mandible
TSAWC-05/07-FSA-1-LMB-F-06	FSA-1	5/1/2007	Largemouth bass	fillet	0.031 J	0.0081 U	0.22 J	0.28 J	0.024 U	0.2200	0.34 UJ	6.7 U	410	1018.4	
TSAWC-05/07-FSA-1-LMB-F-06-DUP	FSA-1	5/1/2007	Largemouth bass	fillet	0.038 J	0.0081 U	0.21 J	0.20 J	0.024 U	0.2200	0.34 UJ	8.4 U			
TSAWC-05/07-FSA-1-LMB-F-07	FSA-1	5/1/2007	Largemouth bass	fillet	0.056 J	0.0081 U	0.23 J	0.23 J	0.024 U	0.1100	0.34 UJ	6.3 U	341	657.8	
TSAWC-05/07-FSA-1-LMB-F-08	FSA-1	5/1/2007	Largemouth bass	fillet	0.050 J	0.0081 U	0.22 J	0.41 J	0.024 U	0.1000	0.34 UJ	8.4 U	289	331.4	
TSAWC-05/07-FSA-1-LMB-F-09	FSA-1	5/1/2007	Largemouth bass	fillet	0.025 J	0.0081 U	0.24 J	0.22 J	0.024 U	0.4100	0.34 UJ	7.5 U	284	278.5	
TSAWC-05/07-FSA-1-LMB-F-10	FSA-1	5/1/2007	Largemouth bass	fillet	0.026 J	0.0081 U	0.22 J	0.20 J	0.024 U	0.0740	0.34 UJ	9.2 U	278	293.7	
TSAWC-05/07-FSA-1-LMB-F-11	FSA-1	5/1/2007	Largemouth bass	fillet	0.028 J	0.0081 U	0.23 J	0.24 J	0.024 U	0.1200	0.34 UJ	6.1 U	269	416.2	
			Mean		0.039	0.0094	0.23	0.25	0.024	0.1596	0.34	7.0	344.9	718.4	
			Min		0.025	0.0081	0.21	0.19	0.024	0.0740	0.34	5.3	269.0	278.5	
			Max		0.066	0.0200	0.24	0.41	0.024	0.4100	0.34	9.2	465.0	1819.1	
			Std Dev		0.013	0.0034	0.01	0.06	0.000	0.0968	0.00	1.2	62.3	444.0	
TSAWC-05/07-FSA-2-LMB-F-01	FSA-2	5/1/2007	Largemouth bass	fillet	0.018 J	0.0081 U	0.20 J	0.19 J	0.024 U	0.1500	0.34 UJ	6.9 U	419	1047.8	sore on mandible
TSAWC-05/07-FSA-2-LMB-F-02	FSA-2	5/1/2007	Largemouth bass	fillet	0.029 J	0.0081 U	0.20 J	0.29 J	0.024 U	0.1200	0.34 UJ	6.9 U	412	1094.7	
TSAWC-05/07-FSA-2-LMB-F-03	FSA-2	5/1/2007	Largemouth bass	fillet	0.035 J	0.0081 U	0.21 J	0.23 J	0.024 U	0.1800	0.34 UJ	11.0 U	447	1577.5	
TSAWC-05/07-FSA-2-LMB-F-04	FSA-2	5/1/2007	Largemouth bass	fillet	0.034 J	0.0081 U	0.20 J	0.21 J	0.024 U	0.0670	0.34 UJ	9.4 U	350	612.3	
TSAWC-05/07-FSA-2-LMB-F-05	FSA-2	5/1/2007	Largemouth bass	fillet	0.046 J	0.0190 J	0.22 U	0.24 J	0.024 U	0.1400	0.34 UJ	7.9 U	296	378.3	
TSAWC-05/07-FSA-2-LMB-F-06	FSA-2	5/1/2007	Largemouth bass	fillet	0.027 J	0.0081 U	0.20 U	0.26 J	0.024 U	0.3800	0.34 UJ	6.9 U	440	1597.2	
TSAWC-05/07-FSA-2-LMB-F-07	FSA-2	5/1/2007	Largemouth bass	fillet	0.048 J	0.0081 U	0.19 U	0.20 J	0.024 U	0.2100	0.34 UJ	6.9 U	375	792	
TSAWC-05/07-FSA-2-LMB-F-08	FSA-2	5/1/2007	Largemouth bass	fillet	0.025 J	0.0081 U	0.21 U	0.18 J	0.024 U	0.2400	0.34 UJ	6.9 U	391	909.9	
TSAWC-05/07-FSA-2-LMB-F-09	FSA-2	5/1/2007	Largemouth bass	fillet	0.053 J	0.0081 U	0.20 U	0.21 J	0.024 U	0.5500	0.34 UJ	5.4 U	498	2125	
TSAWC-05/07-FSA-2-LMB-F-09-DUP	FSA-1	5/1/2007	Largemouth bass	fillet	0.041 J	0.0081 U	0.23 U	0.21 J	0.024 U	0.6000	0.34 UJ	8.5 U			
TSAWC-05/07-FSA-2-LMB-F-10	FSA-2	5/2/2007	Largemouth bass	fillet	0.032 J	0.0081 U	0.23 U	0.28 J	0.024 U	0.0900	0.34 UJ	9.7 U	335	558.4	
TSAWC-05/07-FSA-2-LMB-F-11	FSA-2	5/2/2007	Largemouth bass	fillet	0.028 J	0.0081 U	0.21 U	0.25 J	0.024 U	0.0750	0.34 UJ	8.1 U	318	501.2	
TSAWC-05/07-FSA-2-LMB-F-12	FSA-2	5/2/2007	Largemouth bass	fillet	0.028 J	0.0081 U	0.24 U	0.36 J	0.024 U	0.0620	0.34 UJ	11.0 U	324	489.9	
TSAWC-05/07-FSA-2-LMB-F-13	FSA-2	5/2/2007	Largemouth bass	fillet	0.031 J	0.0081 U	0.21 U	0.24 J	0.024 U	0.1200	0.34 UJ	7.7 U	407	1218.5	sore on mandible
TSAWC-05/07-FSA-2-LMB-F-14	FSA-2	5/2/2007	Largemouth bass	fillet	0.049 J	0.0081 U	0.22 U	0.44 J	0.024 U	0.3500	0.34 UJ	8.9 U	435	1343.7	
TSAWC-05/07-FSA-2-LMB-F-15	FSA-2	5/3/2007	Largemouth bass	fillet	0.047 J	0.0200 J	0.20 U	0.05 J	0.024 U	0.5100	0.34 UJ	5.8 U	509	2600	MS/MSD
			Mean		0.036	0.0095	0.21	0.24	0.024	0.2403	0.34	8.0	397.1	1123.1	
			Min		0.018	0.0081	0.19	0.05	0.024	0.0620	0.34	5.4	296.0	378.3	
			Max		0.053	0.0200	0.24	0.44	0.024	0.6000	0.34	11.0	509.0	2600.0	
			Std Dev		0.010	0.0039	0.01	0.08	0.000	0.1813	0.00	1.7	64.2	641.3	

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-2. VALIDATED RESULTS OF METALS ANALYSES FOR FILETS FROM SMALLMOUTH BASS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Length (mm)	Weight (g)	Field Observations
TSAWC-05/07-FSA-1-SMB-F-01	FSA-1	5/1/2007	Smallmouth bass	fillet	0.120	0.0081 U	0.22 J	0.29 J	0.024 U	0.3400	0.34 UJ	6.2 U	21.0	407	970.2	
TSAWC-05/07-FSA-1-SMB-F-02	FSA-1	5/1/2007	Smallmouth bass	fillet	0.095 J	0.0081 U	0.22 J	0.27 J	0.024 U	0.0900	0.34 UJ	5.6 U	21.6	406	998.7	
TSAWC-05/07-FSA-1-SMB-F-03	FSA-1	5/1/2007	Smallmouth bass	fillet	0.180	0.0081 U	0.21 J	0.36 J	0.024 U	0.2300	0.34 UJ	6.3 U	20.4	402	1002.8	
TSAWC-05/07-FSA-1-SMB-F-04	FSA-1	5/1/2007	Smallmouth bass	fillet	0.170	0.0081 U	0.19 J	0.25 J	0.024 U	0.1300	0.34 UJ	6.4 U	18.7	344	424.4	sore on lower body
			Mean		0.141	0.0081	0.21	0.29	0.024	0.1975	0.34	6.1	20.4	389.8	849.0	
			Min		0.095	0.0081	0.19	0.25	0.024	0.0900	0.34	5.6	18.7	344.0	424.4	
			Max		0.180	0.0081	0.22	0.36	0.024	0.3400	0.34	6.4	21.6	407.0	1002.8	
			Std Dev		0.040	0.0000	0.01	0.05	0.000	0.1118	0.00	0.4	1.3	30.6	283.5	

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-3. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF SPOTTAIL SHINER COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Number in Sample	Mean Length (mm)	Mean Weight (g)
TSAWC-05/07-FSA-1-SS-W-01	FSA-1	5/1/2007	Spottail shiner	whole	0.086 J	0.1100	0.26 U	0.63 J	0.190	0.0300	0.34 UJ	48.0	26.0	2	111.5	12.9
TSAWC-05/07-FSA-1-SS-W-02	FSA-1	5/1/2007	Spottail shiner	whole	0.075 J	0.0140 J	0.29 U	0.71 J	0.100	0.0340	0.34 UJ	31.0 U	23.1	*2*	103.5	11.0
TSAWC-05/07-FSA-1-SS-W-03	FSA-1	5/1/2007	Spottail shiner	whole	0.120	0.0420 J	0.25 U	0.57 J	0.140	0.0450	0.34 U	41.0 R	24.0	2	105.0	10.7
TSAWC-05/07-FSA-1-SS-W-04	FSA-1	5/1/2007	Spottail shiner	whole	0.081 J	0.0420 J	0.28 U	1.40	0.220	0.0480	0.34 U	31.0 R	24.5	2	109.0	13.2
TSAWC-05/07-FSA-1-SS-W-05	FSA-1	5/1/2007	Spottail shiner	whole	0.160	0.0440 J	0.27 U	0.82 J	0.180	0.0330	0.34 U	66.0 R	26.0	6	102.8	10.2
TSAWC-05/07-FSA-1-SS-W-06	FSA-1	5/1/2007	Spottail shiner	whole	0.120	0.0130 J	0.22 U	0.80 J	0.056 J	0.0430	0.34 U	33.0 R	25.0	2	102.0	10.1
TSAWC-05/07-FSA-1-SS-W-07	FSA-1	5/1/2007	Spottail shiner	whole	0.100	0.0230 J	0.31 U	0.57 J	0.400	0.0230	0.34 U	35.0 R	28.1	2	106.0	10.5
TSAWC-05/07-FSA-1-SS-W-08	FSA-1	5/1/2007	Spottail shiner	whole	0.066 J	0.0140 J	0.27 U	0.06 J	0.130	0.0330	0.34 U	32.0 R	22.1	2	106.0	10.0
TSAWC-05/07-FSA-1-SS-W-09	FSA-1	5/1/2007	Spottail shiner	whole	0.078 J	0.0170 J	0.22 U	0.48 J	0.044 J	0.0340	0.34 U	18.0 R	22.3	3	102.7	9.6
TSAWC-05/07-FSA-1-SS-W-10	FSA-1	5/1/2007	Spottail shiner	whole	0.076 J	0.0160 J	0.23 U	0.52 J	0.091 J	0.0280	0.34 U	28.0 R	24.7	3	99.7	7.8
TSAWC-05/07-FSA-1-SS-W-11	FSA-1	5/1/2007	Spottail shiner	whole	0.079 J	0.0250 J	0.27 U	0.66 J	0.130	0.0320	0.34 U	24.0 R	23.1	2	107.5	10.8
TSAWC-05/07-FSA-1-SS-W-12	FSA-1	5/1/2007	Spottail shiner	whole	0.100	0.0430 J	0.30 U	1.00	0.270	0.0490	0.34 U	36.0 R	23.9	2	102.0	9.6
TSAWC-05/07-FSA-1-SS-W-13	FSA-1	5/1/2007	Spottail shiner	whole	0.073 J	0.0100 J	0.19 U	0.75 J	0.065 J	0.0380	0.34 U	18.0 R	25.5	2	100.5	8.6
TSAWC-05/07-FSA-1-SS-W-14	FSA-1	5/1/2007	Spottail shiner	whole	0.110	0.0190 J	0.25 U	0.64 J	0.160	0.0430	0.34 U	24.0 R	26.0	3	102.7	9.2
TSAWC-05/07-FSA-1-SS-W-15	FSA-1	5/1/2007	Spottail shiner	whole	0.150 J	0.0420 J	0.62 U	0.53 J	0.700 J	0.0380	0.36 J	78.0 J	24.0	4	105.8	11.5
TSAWC-05/07-FSA-1-SS-W-15-DUP	FSA-1	5/1/2007	Spottail shiner	whole	0.082 J	0.0130 J	0.24 U	0.55 J	0.096 J	0.0370	0.34 U	20.0 R	24.0			
			Mean		0.097	0.0304	0.28	0.67	0.186	0.0368	0.34	35.2	24.5			
			Min		0.066	0.0100	0.19	0.06	0.044	0.0230	0.34	18.0	22.1			
			Max		0.160	0.1100	0.62	1.40	0.700	0.0490	0.36	78.0	28.1			
			Std Dev		0.028	0.0248	0.10	0.28	0.164	0.0073	0.00	16.6	1.6			
TSAWC-05/07-FSA-2-SS-W-01	FSA-2	5/1/2007	Spottail shiner	whole	0.210	0.0250 J	0.35 U	0.61 J	0.350	0.0230	0.34 U	34.0 R	26.1	2	91.0	7.8
TSAWC-05/07-FSA-2-SS-W-02	FSA-2	5/2/2007	Spottail shiner	whole	0.120 J	0.0620 J	0.45 U	3.10 J	0.480 J	0.0550 J	0.34 U	27.0	24.9	2	113.0	13.1
TSAWC-05/07-FSA-2-SS-W-02-DUP	FSA-2	5/2/2007	Spottail shiner	whole	0.067 J	0.0240 J	0.17 U	0.53 J	0.092 J	0.0510 J	0.34 U	25.0	24.9			
TSAWC-05/07-FSA-2-SS-W-03	FSA-2	5/2/2007	Spottail shiner	whole	0.083 J	0.0190 J	0.26 U	0.52 J	0.270 J	0.0280 J	0.34 U	26.0	22.8	2	103.0	10.9
TSAWC-05/07-FSA-2-SS-W-04	FSA-2	5/2/2007	Spottail shiner	whole	0.075 J	0.0150 J	0.22 U	0.52 J	0.170 J	0.0290 J	0.34 U	41.0	24.7	2	109.0	12.4
TSAWC-05/07-FSA-2-SS-W-05	FSA-2	5/2/2007	Spottail shiner	whole	0.110	0.0090 J	0.24 U	0.58 J	0.120 J	0.0670 J	0.34 U	31.0	23.5	2	106.0	11.9
TSAWC-05/07-FSA-2-SS-W-06	FSA-2	5/2/2007	Spottail shiner	whole	0.073 J	0.0210 J	0.20 U	0.50 J	0.049 J	0.0160 J	0.34 U	41.0	22.9	3	81.3	4.9
TSAWC-05/07-FSA-2-SS-W-08	FSA-2	5/3/2007	Spottail shiner	whole	0.067 J	0.0170 J	0.20 U	0.52 J	0.075 J	0.0520 J	0.34 U	36.0	25.3	1	105	11.1
			Mean		0.101	0.0240	0.26	0.86	0.201	0.0401	0.34	32.6	24.4			
			Min		0.067	0.0090	0.17	0.50	0.049	0.0160	0.34	25.0	22.8			
			Max		0.210	0.0620	0.45	3.10	0.480	0.0670	0.34	41.0	26.1			
			Std Dev		0.048	0.0162	0.09	0.91	0.153	0.0183	0.00	6.4	1.2			

R = Analysis rejected because of low recovery percentage for MS/MSD sample
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-4. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF BANDED KILLIFISH COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Number in Sample	Mean Length (mm)	Mean Weight (g)
TSAWC-05/07-FSA-2-BKF-W-01	FSA-2	5/2/2007	Banded killifish	whole	0.055 J	0.0160 J	0.21 U	0.84 J	0.080 J	0.0170 J	0.34 U	28.0	23.0	13	44.3	0.8
TSAWC-05/07-FSA-2-BKF-W-02	FSA-2	5/2/2007	Banded killifish	whole	0.052 J	0.0100 J	0.22 U	1.10	0.031 J	0.0170 J	0.34 U	26.0	24.1	3	68.3	3.1
TSAWC-05/07-FSA-2-BKF-W-03	FSA-2	5/3/2007	Banded killifish	whole	0.066 J	0.0310 J	0.20 U	0.71 J	0.060 J	0.0160 J	0.34 U	26.0	23.7	26	49.5	1.2
TSAWC-05/07-FSA-2-BKF-W-04	FSA-2	5/3/2007	Banded killifish	whole	0.069 J	0.0350 J	0.24 U	1.60	0.110 J	0.0170 J	0.34 U	34.0	23.7	6	57.8	1.7
TSAWC-05/07-FSA-2-BKF-W-05	FSA-2	5/3/2007	Banded killifish	whole	0.057 J	0.0120 J	0.18 U	0.94 J	0.062 J	0.0190 J	0.34 U	31.0	20.7	24	44.5	0.8
TSAWC-05/07-FSA-2-BKF-W-06	FSA-2	5/3/2007	Banded killifish	whole	0.073 J	0.0150 J	0.23 U	0.87 J	0.110 J	0.0170 J	0.34 U	34.0	22.0	17	40.9	0.7
			Mean		0.062	0.0198	0.21	1.01	0.076	0.0172	0.34	29.8	22.9			
			Min		0.052	0.0100	0.18	0.71	0.031	0.0160	0.34	26.0	20.7			
			Max		0.073	0.0350	0.24	1.60	0.110	0.0190	0.34	34.0	24.1			
			Std Dev		0.008	0.0105	0.02	0.32	0.031	0.0010	0.00	3.7	1.3			

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-5. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF TESSELATED DARTERS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Number in Sample	Mean Length (mm)	Mean Weight (g)
TSAWC-05/07-FSA-2-TD-W-01	FSA-2	5/3/2007	Tesselated darter	whole	0.070 J	0.0081 U	0.17 U	0.59 J	0.094 J	0.0220 J	0.34 U	31.0	25.1	4	59.2	2.4
TSAWC-05/07-FSA-2-TD-W-02	FSA-2	5/3/2007	Tesselated darter	whole	0.048 J	0.0081 U	0.19 U	0.54 J	0.063 J	0.0170 J	0.34 U	22.0	23.9	5	58	1.5
			Mean		0.059	0.0081	0.18	0.57	0.079	0.0195	0.34	26.5	24.5			
			Min		0.048	0.008	0.170	0.540	0.063	0.017	0.340	22.0	23.9			
			Max		0.070	0.008	0.190	0.590	0.094	0.022	0.340	31.0	25.1			
			Std Dev		0.016	0.0000	0.01	0.04	0.022	0.0035	0.00	6.4	0.8			

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-6. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF ZEBRA MUSSELS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Number in Sample	Total Weight (g)
TSAWC-06/07-WBS3-MUS-01	WBS-3	6/14/2007	Mussel	Whole	0.360	0.0960 B	0.70	5.70	1.300	0.0080 B	39	7.2	59.3	35	5.26
TSAWC-06/07-WBS3-MUS-02	WBS-3	6/14/2007	Mussel	Whole	0.260	0.0740 B	0.25	7.70	1.200	0.0090 B	34	12.0	27.2	32	4.98
TSAWC-06/07-WBS3-MUS-03	WBS-3	6/14/2007	Mussel	Whole	0.290	0.0970 B	0.29	1.80 B	1.800	0.0110	6.8	7.9	41.2	38	5.33
TSAWC-08/07-WBS3-MUS-04	WBS-3	8/29/2007	Mussel	Whole	0.260	0.0640 J	0.19 U	1.60 UJ	0.260	0.0065 J	1.8	5.4 U	34.9	34	5.14
TSAWC-08/07-WBS3-MUS-05	WBS-3	8/29/2007	Mussel	Whole	0.250	0.0700 J	0.16 U	1.50 UJ	0.220	0.0062 J	1.9	5.8 U	36.3	37	5
TSAWC-08/07-WBS3-MUS-06	WBS-3	8/29/2007	Mussel	Whole	0.260	0.0810 J	0.20 U	1.40 UJ	0.240	0.0073 J	1.9	5.5 U	35.4	32	4.23
			Mean		0.280	0.0803	0.30	3.28	0.837	0.0080	14.2	7.3	39.1		
			Min		0.250	0.0640	0.16	1.40	0.220	0.0062	1.8	5.4	27.2		
			Max		0.360	0.0970	0.70	7.70	1.800	0.0110	39.0	12.0	59.3		
			Std Dev		0.041	0.0137	0.20	2.72	0.685	0.0018	17.4	2.5	10.9		
TSAWC-06/07-WBS4-MUS-01	WBS-4	6/14/2007	Mussel	Whole	0.270	0.0590 B	0.39	1.60	0.370	0.0060 B	20	5.4	43.3	31	5.1

B = The analyte was detected between the method detection limit (MDL) and the reporting limit.
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-7. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF SNAILS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

Sample No.	Location	Date	Taxon	Sample Type	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	% Solids	Number in Sample	Total Weight (g)
TSAWC-06/07-WBS3-SNL-01	WBS-3	6/14/2007	Snail	Whole	0.390	0.1000	0.32	56.00	1.500	0.0170	24	25.0	39.7	57	5.08
TSAWC-06/07-WBS3-SNL-02	WBS-3	6/14/2007	Snail	Whole	0.380	0.0740 B	0.27	26.00	0.800	0.0180	7.8	16.0	31.9	62	5.29
TSAWC-06/07-WBS3-SNL-03	WBS-3	6/14/2007	Snail	Whole	0.510	0.0610 B	0.67	24.00	1.600	0.0230	5.4	16.0	30.1	59	5.65
TSAWC-08/07-WBS3-SNL-04	WBS-3	8/29/2007	Snail	Whole	0.360	0.0710 J	0.24 U	27.00 J	0.640	0.0130	1.4	15.0 U	35.8	58	5.13
TSAWC-08/07-WBS3-SNL-05	WBS-3	8/29/2007	Snail	Whole	0.330	0.0590 J	0.33 U	24.00 J	0.890	0.0170	1.5	14.0 U	32.2	55	5.17
TSAWC-08/07-WBS3-SNL-06	WBS-3	8/29/2007	Snail	Whole	0.350	0.0760 J	0.30 U	17.00 J	0.610	0.0120	1.5	12.0 U	34.6	65	6.62
			Mean		0.387	0.0735	0.36	29.00	1.007	0.0167	6.9	16.3	34.1		
			Min		0.330	0.0590	0.24	17.00	0.610	0.0120	1.4	12.0	30.1		
			Max		0.510	0.1000	0.67	56.00	1.600	0.0230	24.0	25.0	39.7		
			Std Dev		0.064	0.0147	0.16	13.68	0.434	0.0039	8.8	4.5	3.4		
TSAWC-06/07-WBS4-SNL-01	WBS-4	6/14/2007	Snail	Whole	0.340	0.0620 B	0.42	20.00	0.670	0.0170	58	15.0	46.9	57	5.09

B = The analyte was detected between the method detection limit (MDL) and the reporting limit.
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit