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September 19, 2008

Larry Rosenmann
NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway
Albany, NY 12233-7258

Re: Carrier Corporation, Thompson Road Facility, Syracuse, NY
Corrective Action Order – Index CO 7-20051118-4
CO Update 2008 – FCMS Sanders Creek Sediments

Mr. Rosenmann,

Please find attached one copy of the Focused Corrective Measures Study (FCMS) for the referenced facility. This report was prepared in response to a letter that was received from NYSDEC on May 23, 2008 requesting additional work be performed at the site. Some changes were made following a meeting between NYSDEC and UTC/Carrier personnel and were outlined in meeting minutes submitted to you on July 14, 2008.

Please call me if you have any questions at (615) 255-9300.

Sincerely,

EnSafe Inc.

May M. Heflin

May Heflin, PE

Encl. CO Update 2008 – FCMS Sanders Creek Sediments

cc: Mr. Mark Sergott — NYSDEC (1 hard copy)
Mr. Tim DiGuilio — NYSDEC (1 hard copy)
Mr. James E. Gruppe — NYSDEC (1 hard copy)
Mr. William Penn — UTC (electronic copy via e-mail)
Mr. Nelson Wong — Carrier Corporation (electronic copy via e-mail)

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August 24, 2007

Mr. Larry Rosenmann
NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway
Albany, NY 12233-7258

Re: Carrier Corporation, Thompson Road Facility, Syracuse, New York
Corrective Action Order – Index CO 7-20051118-4
Sanders Creek Sediment and Fish Sampling Report, Revision 1
Supplemental Work Plan: Sanders Creek Sediment and PISCES Study Work Plan

Mr. Rosenmann:

In response to comments dated June 28, 2007, from New York Sate Department of Environmental Conservation on the Sanders Creek Sediment and Fish Sampling Report, April 2007, please find enclosed a revised sampling report which addresses each of the comments made. Also included as an attachment is the Sanders Creek Sediment and PISCES Study Work Plan, which is the supplementary investigation work plan requested in the NYSDEC correspondence.

Please call me if you have any questions at (615) 255-9300.

Sincerely,

EnSafe Inc.

May M. Heflin

May Heflin, PE

Enclosure

cc: Mr. William E. Penn — UTC
Mr. Nelson Wong — Carrier Corporation
Mr. Richard Koeppicus — NYSDEC
Mr. Mark Sergott — NYSDOH
Mr. Tim DiGuilio — NYSDEC
Mr. James E. Gruppe — NYSDEC
Mr. Anthony Giardiello — Carrier Corporation

SANDERS CREEK
SEDIMENT AND FISH SAMPLING REPORT

Carrier Thompson Road Facility
Carrier Parkway
Syracuse, New York

Revision: 1

Prepared for:

UTC Remediation Shared Services
United Technologies Building
Hartford, Connecticut

Prepared by:

EnSafe Inc.
220 Athens Way, Plaza 1, Suite 410
Nashville, Tennessee 37228
(615) 255-9300
(800) 588-7962
www.ensafe.com

April 2007
Revised August 2007

Prepared by:

Joseph P. George

August 28, 2007
Date

Reviewed by:

May M. Heflin, P.E.

August 28, 2007
Date

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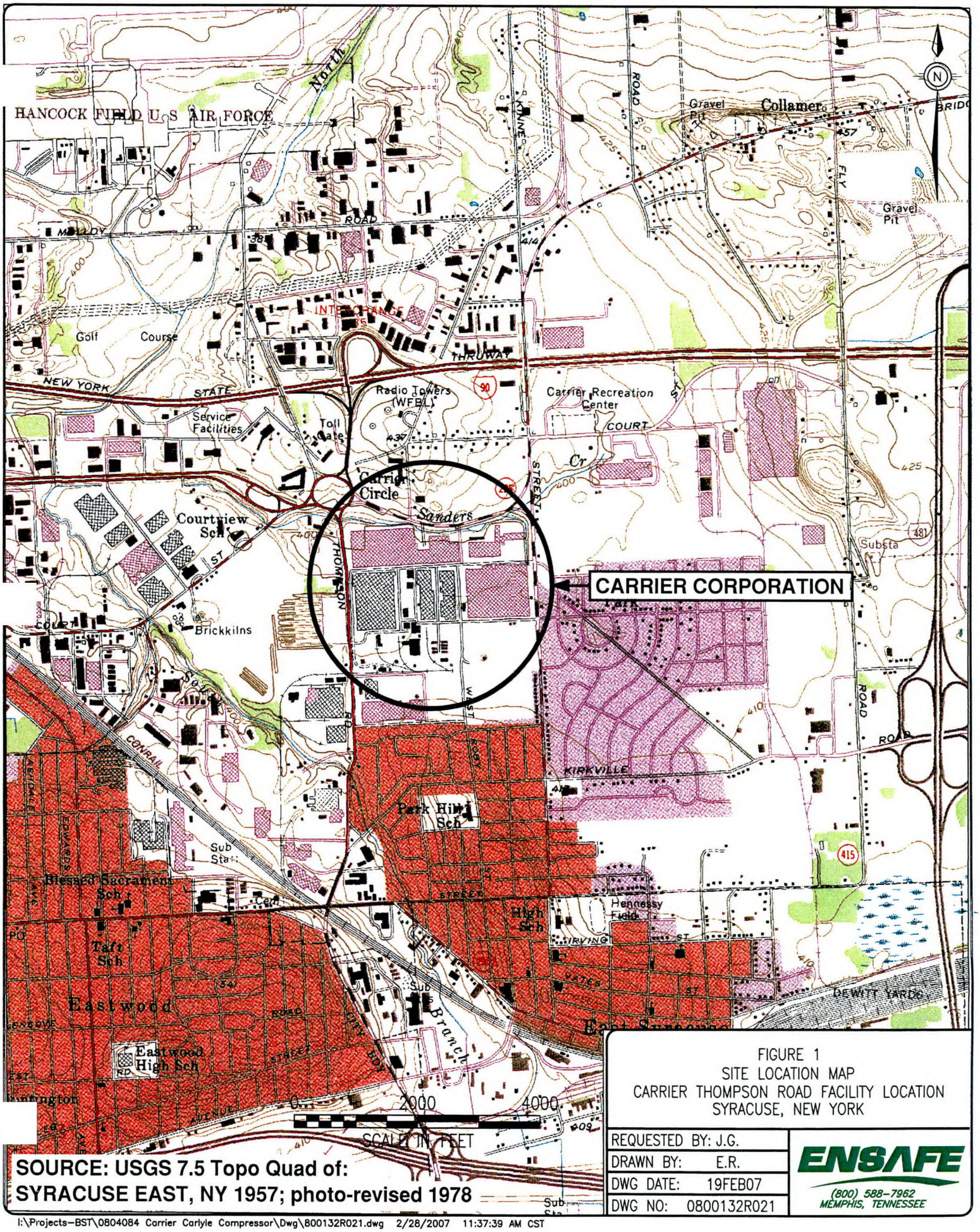
1.0 INTRODUCTION

EnSafe Inc. was retained by United Technologies Corporation (UTC) Shared Remediation Services to perform sediment sampling and biota (fish) sampling in Sanders Creek at the Carrier Corporation (Carrier) Thompson Road facility in Syracuse, New York, to determine concentrations of polychlorinated biphenyls (PCBs) in these media. The sediment and biota sampling is in response to New York State Department of Environment and Conservation (NYSDEC) Consent Order (CO) CO 7 20051118-4 (order) dated February 13, 2006, in which Carrier was directed to evaluate sediment concentrations downstream from the facility as well as to identify if fish within Sanders Creek have been impacted by PCBs. EnSafe submitted a sampling work plan for both sediment and fish for review by the NYSDEC as part of the CO on April 13, 2006. NYSDEC issued comments on the *Sanders Creek Sediment and Fish Sampling Work Plan* in a letter dated August 4, 2006, and a site meeting was held on August 18, 2006, to discuss these comments. EnSafe submitted a revised *Sanders Creek Sediment and Fish Sampling Work Plan* on September 22, 2006, and NYSDEC subsequently approved the plan.

The Carrier facility is at the intersection of Carrier Parkway (New York State Route 98) and Thompson Road in Syracuse, New York, south of the New York State Thruway Interchange 35 and immediately southeast of Carrier Circle. Figure 1 shows the facility location.

As outlined in the Work Plan, sediment samples were collected from two locations downstream from Court Street, five samples were collected between Court Street and Thompson Road moving upstream, and two samples were collected east of Thompson Road. Fish samples were collected from three areas in Sanders Creek corresponding to the areas of sediment sample collection. Stations sampled include a portion of the reach of Sanders Creek to approximately 300 feet west of Court Street, the reach between Court Street and Thompson Road, and the portion of the reach east of Thompson Road to approximately 800 feet east of Thompson Road, on the north side of the Carrier Thompson Road facility.



SOURCE: USGS 7.5 Topo Quad of:
SYRACUSE EAST, NY 1957; photo-revised 1978

FIGURE 1
SITE LOCATION MAP
CARRIER THOMPSON ROAD FACILITY LOCATION
SYRACUSE, NEW YORK

REQUESTED BY:	J.G.
DRAWN BY:	E.R.
DWG DATE:	19FEB07
DWG NO:	0800132R021

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(800) 588-7962
MEMPHIS, TENNESSEE

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All sediment samples were submitted to an NYSDEC-approved analytical laboratory, Accutest Incorporated, in Dayton, New Jersey for analysis of PCBs via U.S. Environmental Protection Agency (USEPA) SW-846 Method 8082 and percent moisture in accordance with the Work Plan. Total organic carbon was analyzed by Accutest using the Lloyd Kahn 1988 method. (The Lloyd Kahn method request was made by Fish, Wildlife, and Marine Resources Biologist Richard Koeppicus of NYSDEC and is a change from the analytical method proposed in the work plan.) Sediment samples were collected by EnSafe personnel during the period of November 8 and 9, 2006.

Fish samples were collected November 7, 2006, by EnSafe personnel with oversight from Mr. Koeppicus. The samples were sorted and stored frozen pending overnight shipment on ice on November 9 to Pace Analytical Laboratories in Kimberly, Wisconsin (NYS Certification NY-11436), where they were analyzed for PCBs using USEPA SW-846 Method 8082 and percent lipids using the laboratory's lipid methodology.

2.0 SAMPLE COLLECTION

2.1 Sediment Sampling

Discussions of the timing, purpose, techniques used, and results obtained during previous sediment sampling events conducted within Sanders Creek are found in the Work Plan. For this sampling event, sediment samples were collected in select locations stated in the Work Plan (Figure 2). Two sediment samples were collected from Sanders Creek west of Court Street; five sediment samples were collected between Court Street and Thompson Road; and two sediment samples were collected east of Thompson Road. Areas of collection for sediment samples focused on the depositional environment of the stream. Composite samples were collected in stream locations of ponded or slow-moving water; on stream bars in areas of sediment deposition, where the stream channel is more lenticular and water is faster moving; and in other areas of the stream based on in-field observations as outlined in the Work Plan.

Per the Work Plan, sediment samples were collected from each location using a stainless steel hand auger from the 0- to 6-inch interval. The sampling crew moved from downstream to upstream in order to not disturb sediment in the creek at the next sampling location. Each sample comprised composite sediment samples from three locations within a five-foot-diameter radius. The hand auger was washed to remove gross contamination and subsequently rinsed with stream water prior to sampling the next location. Table 1 summarizes the observed characteristics of each sediment sampling location in Sanders Creek.

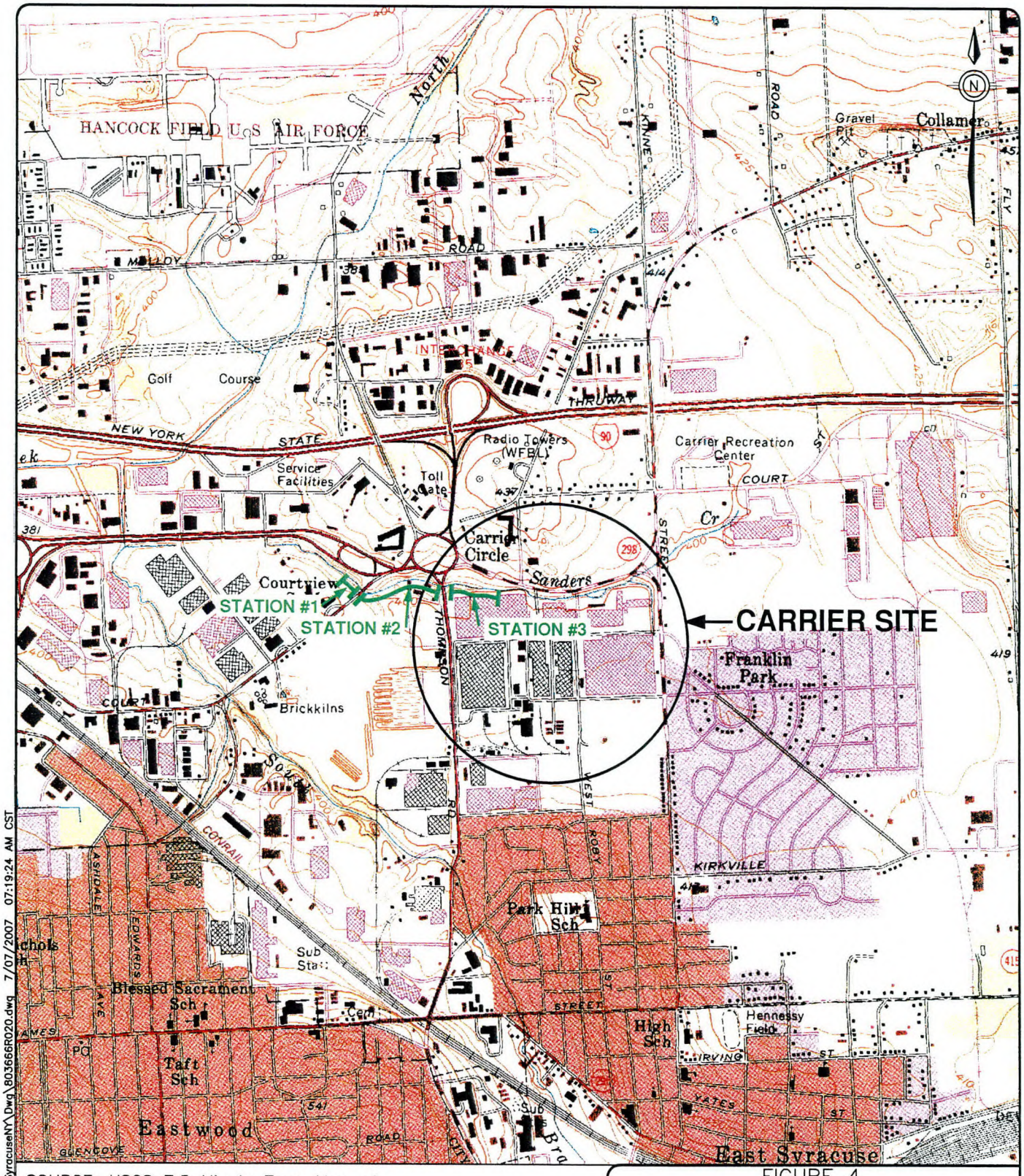
All samples were homogenized by mixing the samples in a stainless steel bowl prior to placing the representative sample in the laboratory-supplied sample jar. The center point of the composite sample location was marked and subsequently surveyed by a New York State Registered Land Surveyor, Phillips and Associates Surveyors, P.C. in Liverpool, New York. Locations are shown in Figure 2. Figure 3 is a comprehensive sediment sampling location map showing all previous sediment sampling locations in Sanders Creek at the facility along with the November 2006 locations.

2.2 Fish Collection

In accordance with the Work Plan, whole-body fish tissue analysis was performed in order to measure the total PCB body burden borne by the fish and, thus, to assess the risk to the fish population. Three stations were sampled for the identification and collection of fish species (Figure 4).

Table 1
Description of Sanders Creek Sediment Sample Location

Sediment Sample Identification	General Location	General Characteristics of Creek at Sample Location
SED01	Approximately 130 feet West of Court Street	Creek is relatively narrow and shallow at location, sediment buildup on bank
SED02	Approximately 40 feet west of Court Street	Creek is straight and shallow at location, rocky bottom, sediment contained numerous pebbles
SED03	Approximately 160 feet east of Court Street	Creek straight after bend, deeper pool of less active water with abundant sediment
SED04	Approximately 365 feet east of Court Street	Creek is straight, area of swift-moving water and abundant pebbles
SED05	Approximately 585 feet east of Court Street,	Curving area of creek with relatively swift-moving water along engineered embankment for former motel property, downstream of culvert, west of Thompson Road
SED06	Approximately 200 feet west of Thompson Rd.	Deeper area (water depth approx. 1 foot) with abundant pebbles on upstream side of culvert along former motel property
SED07	Approximately 25 feet west of Thompson Rd.	Shallow swift-moving water area of creek just downstream from Thompson Rd. where small runoff drainage enters creek from former gas station property.
SED08	Approximately 115 feet east of Thompson Rd.	Deeper (greater than 1 foot) slower-moving area of creek with abundant sediment and few pebbles.
SED09	Approximately 400 feet east of Thompson Rd.	Deeper (greater than 1 foot) slower-moving area of creek with abundant sediment.



SOURCE: USGS 7.5 Minute Topo Map of:
SYRACUSE EAST, NY 1957; Photo-revised 1978

LEGEND

H – FISH SAMPLING STATIONS

0 2000 4000

SCALE IN FEET

FIGURE 4
SANDERS CREEK FISH
SAMPLING STATIONS – NOV 2006
CARRIER CORPORATION
SYRACUSE, NEW YORK

REQUESTED BY:	J.G.
DRAWN BY:	E.R.
DWG DATE:	07AUG07
DWG NO:	803666R020

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MEMPHIS, TENNESSEE

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Stations corresponded to the following: Station 1 was the area west of Court Street to a maximum distance of 300 feet downstream; Station 2 was the area west of Thompson Road to Court Street, an approximate distance of 1,050 feet; and Station 3 was the area from Thompson Road west to approximately 800 feet upstream in Sanders Creek. All available habitat environments at the three stations were sampled including tree stumps, snags, grass beds, banks, pools, and overhangs. The fish sampling was conducted with oversight from Mr. Koeppicus of NYSDEC. The length of reaches at each station, sampling techniques, species identification, and sample selection for laboratory analysis was confirmed with Mr. Koeppicus.

A Coffelt Manufacturers Mark 10 backpack electro shocker or equivalent was used to sample the fish. The backpack unit was operated in an upstream direction with a second person netting any shocked fish using dip nets. Sampling was continued at each station until an approximate volume that would yield five sample sets of a minimum 50-gram weight was collected. After fish from all stations were collected, the species of fish collected was noted along with the number of individuals of each species. Many fish species were identified at each sampling station. Harvested fish were contained in 5-gallon pails at each station until all stations were sampled to ascertain the most dominant single fish species at each station. For Station 1, six species were identified including white sucker, creek chub, fat head minnow, pumpkinseed sunfish, large mouth bass, and long nose dace. At Station 2, four species were identified, creek chub, pumpkinseed sunfish, white sucker, and long nose dace. Bullfrogs were also identified within this station. Species identified at Station 3 include creek chub, catfish, white sucker, pumpkinseed sunfish, and long nose dace. Crayfish were also identified over the length of this station as were bullfrogs. No threatened or endangered species were observed or collected as part of the fish collection activities within Sanders Creek. The fish species and number of individuals identified at each station sampled in Sanders Creek are shown in Table 2 below.

Table 2
Sanders Creek Fish Species and Number of Individuals Identified

Station Number	Identified Species	Number of Individuals Collected
Station 1	Bass, small mouth	1
	Chub, Creek	20
	Dace, Longnose	3
	Minnow, Fat Head	4
	Sucker, White	7
	Sunfish, Pumpkinseed	6
Station 2	Chub, Creek	37
	Dace, Longnose	32
	Sucker, White	8
	Sunfish, Pumpkinseed	4
Station 3	Chub, Creek	98
	Dace, Longnose	54
	Sucker, White	12
	Sunfish, Pumpkinseed	11
	Catfish	1

The most common species at all three stations was noted as the creek chub, which was confirmed by Mr. Koeppicus. Therefore, the sample sets were constructed from the creek chub individuals collected at each station. For Station 1 west of Court Street, five sample sets were formed as outlined in Table 3.

2.3 Habitat Evaluation

Habitats associated with Sanders Creek were evaluated and scored at each station utilizing the Rapid Bioassessment Protocol (RBP) for Use in Streams and Wadeable River (Barbour et. al, 1999). Characteristic of a low-gradient stream, habitat parameters evaluated included epifaunal substrate and available cover, pool substrate, pool variability, sediment deposition, channel flow, channel alteration, channel sinuosity, bank stability, and riparian vegetative zone width. A score ranging from 0 to 20 (20 being best) was assigned to each criterion listed on the habitat assessment field form then summed to acquire an overall habitat score for each station. The overall score was ranked accordingly to the following habitat assessment scale: poor (0-47), marginal (60-100), suboptimal (113-153), and optimal (166-200).

Table 3
Weight and Size Characteristics of Fish Samples Collected from Sanders Creek Sampling Stations

Station Number	Sample Number	Individual Sample ID	Relative Size	Weight (g)	Length (mm)	General Description of Individual
1	1	1-1	Large	94.7	20	Large Creek chub
1	2	1-2	Large	77.8	19	Large Creek chub
1	3	1-3	Large	38.9	18	Large Creek chub
1	4	1-4a	Medium	18.86	13	Medium Creek chub
		1-4b		18.22	12	Medium Creek chub
		1-4c		14.78	11	Medium Creek chub
1	5	1-5a	Small	1.9	5	Small Creek chub
		1-5b		2.0	5	Small Creek chub
		1-5c		1.9	6.5	Small Creek chub
		1-5d		1.8	6	Small Creek chub
		1-5e		2.2	6	Small Creek chub
		1-5f		2.5	5.5	Small Creek chub
		1-5g		2.5	5.5	Small Creek chub
2	1	2-1	Large	158	23	Large Creek chub
2	2	2-2	Large	76	19	Large Creek chub
2	3	2-3a	Medium	37.1	15	Medium Creek chub
		2-3b		28.7	14	Medium Creek chub
2	4	2-4a	Medium	21.6	14	Medium Creek chub
		2-4b		20.9	12	Medium Creek chub
		2-4c		20.4	12	Medium Creek chub
		2-4d		19.5	12	Medium Creek chub
		2-4e		17.2	11.5	Medium Creek chub
2	5	2-5a	Small	Weights not obtained for each individual	5	Small Creek chub
		2-5b			4.5	Small Creek chub
		2-5c			5	Small Creek chub
		2-5d			5.5	Small Creek chub
		2-5e			5.75	Small Creek chub
		2-5f			6	Small Creek chub
		2-5g			6	Small Creek chub
		2-5h			5.5	Small Creek chub
		2-5i			4.75	Small Creek chub
		2-5j			5	Small Creek chub
		2-5k			5	Small Creek chub

Table 3
Weight and Size Characteristics of Fish Samples Collected from Sanders Creek Sampling Stations

Station Number	Sample Number	Individual Sample ID	Relative Size	Weight (g)	Length (mm)	General Description of Individual
2	5	2-5l	Small	Total weight Is 46.3 grams for 23 individuals	5.5	Small Creek chub
		2-5m			6	Small Creek chub
		2-5n			6	Small Creek chub
		2-5o			5	Small Creek chub
		2-5p			4.5	Small Creek chub
		2-5q			5.8	Small Creek chub
		2-5r			5.7	Small Creek chub
		2-5s			6	Small Creek chub
		2-5t			5	Small Creek chub
		2-5u			5.3	Small Creek chub
		2-5v			5.8	Small Creek chub
		2-5w			4.5	Small Creek chub
3	1	3-1	Large	91	20	Large Creek chub
3	2	3-2	Large	66	19	Large Creek chub
3	3	3-3	Large	60	18	Large Creek chub
3	4	3-4a	Medium	15.86	11	Medium Creek chub
		3-4b		17.34	13	Medium Creek chub
		3-4c		19.14	13.5	Medium Creek chub
3	5	3-5a	Small	Weights not obtained for each individual	6	Small Creek chub
		3-5b			5	Small Creek chub
		3-5c			6	Small Creek chub
		3-5d			6.5	Small Creek chub
		3-5e			6	Small Creek chub
		3-5f			5	Small Creek chub
		3-5g			6.5	Small Creek chub
		3-5h			6	Small Creek chub
		3-5i			6	Small Creek chub
		3-5j			5	Small Creek chub
		3-5k			5	Small Creek chub
		3-5l			6	Small Creek chub
		3-5m			6	Small Creek chub
		3-5n			5	Small Creek chub
		3-5o			5	Small Creek chub
		3-5p			5	Small Creek chub
		3-5q		Total	5	Small Creek chub

Table 3
Weight and Size Characteristics of Fish Samples Collected from Sanders Creek Sampling Stations

Station Number	Sample Number	Individual Sample ID	Relative Size	Weight (g)	Length (mm)	General Description of Individual
3	5	3-5r	Small	weight is 46.3 grams for 29 individuals	5	Small Creek chub
		3-5s			6	Small Creek chub
		3-5t			6	Small Creek chub
		3-5u			6	Small Creek chub
		3-5v			5.5	Small Creek chub
		3-5w			6.5	Small Creek chub
		3-5x			7	Small Creek chub
		3-5y			5.53	Small Creek chub
		3-5z			5.68	Small Creek chub
		3-5aa			6.5	Small Creek chub
		3-5bb			6.5	Small Creek chub
		3-5cc			6	Small Creek chub

Notes:
g — grams
mm — millimeters
No discerning marks or ulcers were observed on creek chub individuals collected for sampling.

3.0 SAMPLE RESULTS

3.1 Sediment Sample Results

Table 4 summarizes the detectable sediment PCB analytical results. Copies of all laboratory report sheets are in Appendix A and shown on Figure 5. Sediment PCB results are similar to historic PCB concentrations for samples collected previously by both NYSDEC and Carrier. The lone exception is the duplicate sample of Station 3 Sample 2. Overall, Aroclor 1254 concentrations in sediment were a factor of 3 times lower than Aroclor 1260 concentrations at Station 1; nearly equal to, to at least 5.3 times lower at Station 2; and 3.4 to 6.4 lower at Station 3.

3.2 Fish Collection Results

3.2.1 Fish Abundance

A review of geographical range maps published in Peterson Field Guide *A Field Guide to Freshwater Fishes* (Page, L. M. and B. M Burr, 1991) has identified 64 species of fish known to utilize small stream and/or headwater creek habitats throughout the Syracuse, New York, region and to have a potential of occurring within the Sanders Creek drainage. During the survey, 308 individual fish specimen representing seven species were captured and identified across the three sampling stations. The order of dominance of species collected was creek chub with 165 specimen (53.5%), longnose dace with 89 specimen (28.9%), white sucker with 27 specimen (8.7%), pumpkinseed with 21 specimen (6.8%), fathead minnow with four specimen (1.3%), followed by largemouth bass and bullhead catfish with 1 specimen each (0.4%). Although only seven species were identified within the sample reaches, it is believed that other species not captured during this survey may inhabit Sanders Creek closer to its headwater and downstream near the confluence with the South Branch of Ley Creek where the stream increases in size. The absence of some species within the sample stations is due to the available habitat type and also to the time of year sampling occurred.

3.2.2 Habitat Evaluation

Habitat in Sanders Creek was evaluated using the methods described in Section 2.3 Station 1 received a habitat score of 87 out of a possible 200 (43.5%), placing this section of Sanders Creek in the marginal category. Limiting factors included poor channel sinuosity, vegetation protection, riparian vegetation zone and marginal epifaunal substrate, pool substrate, pool variability, and sediment deposition.

Station 2 received a habitat score of 100 out of 200 (50.0%), placing this portion of the stream at the top of the marginal category. Limiting factors included poor channel sinuosity, and riparian vegetation zone, marginal pool substrate, sediment deposition and channel alteration.

PCBs and Pe..... ipids in Fish
Sanders Creek
Carrier Thompson Road Facility
Syracuse, New York

ID/Location	Date	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs	Percent Lipids	Lipid-Fraction Normalized Total PCBs
Station 1 (West of Court Street Bridge)											
Sample 1 (individual)	11/7/2006	<0.380	<0.380	<0.380	<0.380	<0.380	1.500	5.600	7.100	2.41	294.6
Sample 2 (individual)	11/7/2006	<0.190	<0.190	<0.190	<0.190	<0.190	0.880	2.500	3.400	1.98	171.7
Sample 3 (composite)	11/7/2006	<0.057	<0.057	<0.057	<0.057	<0.057	0.290	1.100	1.400	0.99	141.4
Sample 4 (composite)	11/7/2006	<0.150	<0.150	<0.150	<0.150	<0.150	0.940	2.200	3.200	1.45	220.7
Sample 5 (composite sample)	11/7/2006	<0.470	<0.470	<0.470	<0.470	<0.470	2.200	6.700	8.800	4.30	204.7
Station 2 (Court Street East to Thompson Road)											
Sample 1 (individual)	11/7/2006	<0.380	<0.380	<0.380	<0.380	<0.380	1.500	4.600	6.100	4.39	139.0
Sample 2 (individual)	11/7/2006	<0.280	<0.280	<0.280	<0.280	<0.280	1.200	3.800	5.000	1.40	357.1
Sample 3 (individual)	11/7/2006	<0.150	<0.150	<0.150	<0.150	<0.150	0.980	1.800	2.800	2.52	111.1
Sample 4 (composite sample)	11/7/2006	<0.280	<0.280	<0.280	<0.280	<0.280	1.400	3.500	4.900	2.62	187.0
Sample 5 (composite sample)	11/7/2006	<0.190	<0.190	<0.190	<0.190	<0.190	1.600	2.900	4.500	4.12	109.2

Table 4
Sanders Creek Sediment Sample PCB Results
Carrier Thompson Road Facility
Syracuse, New York

ID/Location	Date	GPS Position	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Percent Solids	Total Organic Carbon	Normalized Sediment Criteria (mg PCB/gOC)	Normalized Results Aroclor 1254	Normalized Results Aroclor 1260
Station 1														
CARMSTA101 (Station 1, Sample 1) 135 ' Downstream (west) from Court Street Bridge	11/8/2006	43° 05.126' N 76° 05.416 W	<0.011	<0.035	<0.031	<0.018	<0.020	<0.027	<0.012	57.6	30,300	NR	NR	NR
CARMSTA102 (Station 1, Sample 2) 40' West of Court Street Bridge	11/8/2006	43° 05.114 N 76° 05.402 W	<0.0091	<0.029	<0.026	<0.015	<0.016	0.107	0.333	69	7,360	0.0103	0.015	0.045
Station 2														
CARMSTA201 (Station 2, Sample 1) 155' Upstream (east) from Court Street Bridge	11/9/2006	43° 05.204' N 76° 05.636 W	<0.073	<0.023	<0.021	<0.012	<0.018	0.202	0.646	86.6	2,360	0.0033	0.086	0.274
CARMSTA202 (Station 2, Sample 2) 365' East of Court Street Bridge	11/9/2006	43° 03.321 N 76° 02.327 W	<0.087	<0.027	<0.025	<0.015	<0.016	<0.022	<0.0092	72.6	7,370	NR	NR	NR
CARMSTA203 (Station 2, Sample 3) 588' East of Court Street Bridge	11/9/2006	43° 02.964 N 76° 01.761 W	<0.0077	<0.024	<0.022	<0.013	<0.014	<0.019	6.870 J	81.6	7,970	0.0112	NR	0.862
CARMSTA204 (Station 2, Sample 4) 838' East of Court Street Bridge	11/9/2006	43° 01.503 N 76° 03.296 W	<0.0079	<0.025	<0.022	<0.013	<0.014	0.0694	0.0776	80.1	1,200	0.0017	0.058	0.065
CARMSTA205 (Station 2, Sample 5) 1018' east of Court Street Bridge	11/9/2006	43° 01.489 N 76° 03.272 W	<0.0076	<0.026	<0.022	<0.013	<0.014	0.405	2.160	82.7	6,110	0.0086	0.066	0.354
Station 3														
CARMSTA301 (Station 3, Sample 1) 113' East of Thompson Road	11/8/2006	43° 05.207' N 76° 05.344 W	<0.0094	<0.030	<0.027	<0.016	<0.017	1.280 J	8.220 J	66.3	22,700	0.0318	0.056	0.362
CARMSTA302 (Station 3, Sample 2) 400' East of Thompson Road	11/8/2006	43° 05.221 N 76° 05.674 W	<0.011	<0.035	<0.032	<0.018	<0.020	0.141	0.481	57.3	40,400	0.0566	0.003	0.012
CARMSTA302 (Station 3, Duplicate of Sample 2) 400' East of Thompson Road	11/8/2006	43° 05.221 N 76° 05.674 W	<0.0083	<0.026	<0024	<0.014	<0.15	7.050 J	36.90 J	75.1	28,400	0.0398	0.248	1.299
CARE110906A (Equipment Blank) Blank collected from Hand Auger	11/9/2006	NA	<0.0001	<0.00052	<0.00043	<0.00018	<0.00017	<0.00012	<0.00013	NA	NA	NA	NR	NR
New York State Wildlife Bioaccumulation Sediment Criteria for PCBs (µg/gOC)			1.4	1.4	1.4	1.4	1.4	1.4	1.4					

Notes:
All results are reported in milligrams per kilogram (mg/kg) except percent solids which is reported in percent.
ND - Not Detected
NA - Not Analyzed
J - Data review indicates sample results potentially biased high.
NR - Data not able to be normalized as no concentrations were identified above method detection limits.

Station 3 also received a habitat score of 87 out of 200 (43.5%), placing this section within the marginal category. Limiting factors included poor channel sinuosity, and vegetation protection, marginal epifaunal substrate, pool substrate, pool variability, and channel alteration. A summary table detailing the general description of each reach, species observed, score for each reach and rationale for each score is in Table 5. Individual Habitat Assessment Field Data Sheets are compiled in Appendix B.

Table 5
Stream Habitat Assessment Summary

Site Description		Habitat Assessment Total Score*	Fish Species Observed
Reach 1	Channel is 119 meters in length, 0.64 meters in depth and less than 3 meters wide. Substrate consists of 10 % cobble, 10% gravel, 40% sand and 40% silt. Channel morphology consisted of 30% riffle, 60% runs, and 10% pools and has not been channelized. Canopy cover is partly open and dominated by eastern cottonwoods. Channel contained 10% aquatic vegetation. Water parameters recorded: temperature – 8.4 ^{0}C, pH – 7.3, Dissolved Oxygen – 10.0 mg/L.	87 (Marginal)	White sucker, Creek chub, Fathead minnow, Bluegill, Longnose dace, Crappie, Pumpkinseed sunfish, Largemouth Bass
Reach 2	Channel is 119 meters in length, 0.64 meter in depth and less than 3 meters wide. Substrate consists of 10 % cobble, 10% gravel, 40% sand and 40% silt. Channel morphology consisted of 10% riffle, 30% runs, and 60% pools and has not been channelized. Canopy cover is partly open and dominated by eastern cottonwoods. Channel contained 10% aquatic vegetation. Water parameters recorded: temperature – 8.2 ^{0}C, pH – 7.0, Dissolved Oxygen – 9.0 mg/L.	100 (Marginal)	White sucker, Creek chub, Longnose dace, Pumpkinseed sunfish.
Reach 3	Channel is 221 meters in length, 0.6 meter in depth and 3 meters wide. Substrate consists of 10 % cobble, 20% gravel, 20% sand and 50% silt. Channel morphology consisted of 20% riffle, 60% runs, and 20% pools and has been channelized. Canopy cover is partly open and dominated by eastern cottonwoods. Channel did not contained aquatic vegetation. Water parameters recorded: temperature - 11.3 ^{0}C, pH – 7.7, Dissolved Oxygen – 12.2 mg/L.	87 (Marginal)	White sucker, Creek chub, Bluegill, Longnose dace, Bullhead, Pumpkinseed sunfish.

Note: * - See Habitat Assessment Field Data Sheets in Appendix B.

Under optimal conditions, a stream course has ample vegetation to cover and protect the stability of its banks, a tree canopy that shades and cools the water course as well as provides a source of fallen material that is utilized as food source and habitat by organisms inhabiting the stream channel. The stream course meanders along its route slowing the water velocity, thus creating depositional bars, small floodplains, and additional habitats within the channel, such as riffles, runs, and pools, which in turn are utilized by numerous fish, amphibian, and reptile species.

Sanders Creek's ranking as a marginal habitat category indicates that habitat within the creek has been undergoing a combination of disturbances by human activities and natural forces over a period of time. The reduced amount of vegetation as bank protection and riparian buffer zone has allowed surface water run-off from adjacent areas impervious to rain to weaken bank stability leading to bank erosion along the creek. The reduction in tree canopy increases water temperature and reduces the input source of food and habitat for aquatic organisms. The low sinuosity or number of bends in the stream indicates that the stream channel may have been altered or straightened along its original course. Low sinuosity sets the stage for an increase in water velocity during heavy rain events, leading to increased bank sloughing and scouring of channel bottom, thus reducing the available aquatic habitats. Reduced habitats such as vegetated stream channel, reduced or eliminated riffles and runs, and graveled channel beds decrease the number of fish species capable of inhabiting the stream.

3.2.3 Catch per Unit Effort

A catch per unit effort was to be calculated per the scope of work; however, due to the size of the creek and the lack of fish diversity, efforts to collect fish were based on acquiring an acceptable quantity and a dominant species over each sampling reach. The dominant species over the three sampling stations was found to be the creek chub.

3.2.4 Index of Biotic Integrity

As with the catch per unit effort, an index of biotic integrity was also to have been calculated for the samples. However, at the direction of Mr. Koeppicus, and because of the conditions of the stream, the index was deemed unnecessary since the focus of the collection effort was to acquire an acceptable quantity of individual fish species over each sampling reach.

3.2.5 Fish PCB Concentration Results

Two aroclors were identified in fish tissue within Sanders Creek both at the facility and downstream of the facility. Sample results are presented in Table 6 and copies of the laboratory report sheets are in Appendix C. PCB concentrations are present in all sizes of individual fish collected from each station. Large, medium, and small individuals collected from both the Carrier plant area and downstream from the facility contained PCBs. For each sample analyzed, the Aroclor 1260 concentration ranged from 1.8 to 3.7 times higher than the associated Aroclor 1254 concentration.

PCBs and Pe... ...ipids in Fish
Sanders Creek
Carrier Thompson Road Facility
Syracuse, New York

ID/Location	Date	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs	Percent Lipids	Normalized Total PCBs
Station 3 (East of Thompson Road)											
Sample 1 (individual)	11/7/2006	<0.095	<0.095	<0.095	<0.095	<0.095	0.61	1.400	2.000	0.82	243.9
Sample 2 (individual)	11/7/2006	<0.150	<0.150	<0.150	<0.150	<0.150	1.200	1.600	2.800	3.00	93.3
Sample 3 (individual)	11/7/2006	<0.190	<0.190	<0.190	<0.190	<0.190	1.100	2.100	3.200	2.64	121.2
Sample 4 (composite sample)	11/7/2006	<0.170	<0.170	<0.170	<0.170	<0.170	1.300	2.300	3.500	2.69	130.1
Sample 5 (composite sample)	11/7/2006	<0.380	<0.380	<0.380	<0.380	<0.380	1.600	3.000	4.700	4.70	100.0
NYSDEC Remedial Goal		**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**		

Notes:
All results are reported in milligrams per kilogram (mg/kg) wet weight except percent lipids which is reported in percent.

CARRIER THOMPSON ROAD FACILITY

LOCATION OF L17 IS APPROXIMATELY 1500 FEET WEST OF COURT STREET

L17 All Aroclors ND

SED01 Aroclor 1254 – <0.027 Aroclor 1260 – <0.012

SED02 Aroclor 1254 – 0.107 Aroclor 1260 – 0.333

L18 Aroclor 1260 – .016J

SED03 Aroclor 1254 – 0.202 Aroclor 1260 – 0.646

SED04 Aroclor 1254 – <0.022 Aroclor 1260 – <0.0092

SED05 Aroclor 1254 – <0.019 Aroclor 1260 – 6.67J

SED06 Aroclor 1254 – 0.0694 Aroclor 1260 – 0.0776

L101 All Aroclors ND

L102 Aroclor 1016 – 0.034 Aroclor 1254 – 2.133 Aroclor 1260 – 7.4

L103 Aroclor 1016 – 0.068 Aroclor 1254 – 1.8 Aroclor 1260 – 7.9

SED07 Aroclor 1254 – 0.405 Aroclor 1260 – 2.160

001 Aroclor 1260 – 1.4

002 0–6" All Aroclors ND 6–12" All Aroclors ND

SED08 Aroclor 1254 – 1.285J Aroclor 1260 – 8.22J

SED09 Aroclor 1254 – 0.141 Aroclor 1254 dup – 7.05J Aroclor 1260 – 0.481 Aroclor 1260 dup – 35.90J

003 0–6" Aroclor 1260 – 0.27 6–12" Aroclor 1254 – 3.66

004 0–6" Aroclor 1260 – 0.8 6–12" Aroclor 1260 – 0.468

005 0–6" All Aroclors ND 6–12" Aroclor 1260 – 1.18

006 0–6" Aroclor 1260 – 0.603 6–12" Not Sampled

007 0–6" Aroclor 1260 – 2.22 6–12" Not Sampled

008 0–6" Aroclor 1260 – 0.65 6–12" Aroclor 1260 – 0.046

L104 Aroclor 1254 – 0.140K Aroclor 1260 – 0.063K

L105

L106 Aroclor 1254 – 0.083PK Aroclor 1260 – 0.170K

SD01 0–6" All Aroclors ND 6–12" All Aroclors ND

SD02 0–6" All Aroclors ND 6–12" All Aroclors ND

SD03 0–6" All Aroclors ND 6–12" All Aroclors ND

SD04 0–6" All Aroclors ND 6–12" All Aroclors ND

SD05 0–6" All Aroclors ND 6–12" All Aroclors ND

NORTH THOMPSON ROAD · ROUTE 298 · NYS THRUWAY TOLL BOOTH · HAMPTON INN · HOLIDAY INN · CARRIER CIRCLE · VACANT LOT · DOUBLETREE HOTEL · OFFICE BUILDING · PARKING LOT · FORMER MOTEL · MOTEL · FORMER GAS STATION · MCDONALD'S · COURT STREET · SANDERS CREEK · SANDERS CREEK PARKWAY · NEW VENTURE GEAR DRIVE · CREST HILL SUITES · CARLYLE COMMPRESSOR · A & R · KINNE STREET · THOMPSON ROAD · TR-1 · TR-2 · TR-2B · TR-3 · TR-4 · TR-5 · TR-6 · TR-7 · TR-7A · TR-8 · TR-8A · TR-9 · TR-10 · TR-11 · TR-12 · TR-13 · TR-14 · TR-18 · TR-18A · TR-19 · TR-20 · TR-21 · TR-21A · TR-22 · TR-23 · SWAMP · FILLED AREA · ACCESS ROAD · HIGH TENSION POWER LINE · LANDFILL · RESIDENTIAL

0 300 600

SCALE IN FEET

LEGEND

TR–2	BUILDINGS AT CARRIER THOMPSON ROAD FACILITY
●	NYSDEC SEDIMENT SAMPLE LOCATION (ONONDAGA LAKE NPL SITE) TRIBUTARY SAMPLING, NYSDEC 1996 AND 1997 DATA)
⊙	CARRIER SEDIMENT SAMPLE LOCATION (NOV 2006)
⊙	CARRIER SEDIMENT SAMPLE LOCATION (DEC 2001)
●	CARRIER SEDIMENT SAMPLE LOCATION (JUL 2001)
ND	NON DETECT ABOVE METHOD DETECTION LIMIT
K,PJ	UNKNOWN NYSDEC DATA QUALIFIERS

NOTE:

ONLY AROCLOR RESULTS ABOVE DETECTION LIMITS ARE SHOWN DUE TO SPACE LIMITATIONS. IF AROCLORS ARE BELOW DETECTION LIMITS, ND OR NON–DETECT IS NOTED.

2007 Sed SAMPLING Report

FIGURE 3
HISTORIC SEDIMENT SAMPLE LOCATIONS
CARRIER FACILITY THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY:	J.G.
DRAWN BY:	E.R.
DWG DATE:	07AUG07
DWG NO:	803666R019

ENSAFE (800) 588–7962 MEMPHIS, TENNESSEE

I:\Projects–BST\0803666 Carrier\803666R019.dwg 8/02/2007 2:15:37 PM CST

Percent lipids were also analyzed by the laboratory. In general, the fifth sample of each sampling station, comprising numerous small creek chub individuals, contained the highest percent lipids. A large single creek chub individual representing Sample 1 of Station 2 also contained a high lipids percent. Percent lipids results are also contained within Table 6 and in Appendix C.

4.0 DATA REVIEW AND EVALUATION

The sediment sampling results were reviewed by laboratory Quality Control/Quality Assurance personnel and were found to be valid with few qualifications. An EnSafe chemist reviewed the data and determined the data is usable with the appropriate qualification. A discussion of the data review is found in Appendix D.

The Sanders Creek fish sampling results were also reviewed by laboratory Quality Control/Quality Assurance personnel and were found to be valid with few qualifications. An EnSafe chemist reviewed the data and determined the data is usable with the appropriate qualification. A discussion of the data review is found in Appendix D.

5.0 FUTURE ACTIVITIES

No further sediment or fish sampling or collection activities, conducted as part of the CO, are scheduled pending review of this data package by NYSDEC.

Other planned activities conducted at the site as part of the CO included removal of sediment from the western and central storm water lines at the facility and composite sediment sampling for PCBs. These actions were performed the week of May 7, 2007.

6.0 BIBLIOGRPAHY

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Page, L. M. and B. M. Burr. 1991. *A Field Guide to Freshwater Fishes of North America North of Mexico.* Peterson Field Guide Series. Houghton Mifflin Company. New York.

Werner, Robert C., 2004, *Freshwater Fishes of the Northeastern United States*, Syracuse University Press. Syracuse, New York.

Appendix A
Sanders Creek Sediment Sample
Laboratory Analytical Results

See Enclosed Compact Disk for Adobe pdf file containing these results

B

Appendix B

Sanders Creek Fish Sampling Habitat Assessment Field Data Sheets

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

STREAM NAME:	Sanders Creek		LOCATION:	Syracuse, NY	
STATION #	1	RIVERMILE	STREAM CLASS:	Perennial	
LAT:		LONG:	RIVER BASIN:	Seneca - 04140201	
STORET #			AGENCY:	NYSDEC	
INVESTIGATORS:	J. Garcia, J. George				
FORM COMPLETED BY: J. Garcia			DATE: 11/07/06 TIME: 8:10 AM PM	REASON FOR SURVEY: Corrective Action Order	

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30 – 50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10 – 30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE: 8	20 19 18 17 16	15 14 13 12 11	10 9 **8** 7 6	5 4 3 2 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE: 9	20 19 18 17 16	15 14 13 12 11	10 **9** 8 7 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pool present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
SCORE: 10	20 19 18 17 16	15 14 13 12 11	**10** 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20 – 50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50 – 80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE: 9	20 19 18 17 16	15 14 13 12 11	10 **9** 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills > 75% of the available channel; or < 25% of channel substrate is exposed.	Water fills 25 – 75% of the available channel, and/or riffle substrate are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE: 16	20 19 18 17 **16**	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some Channelization present, usually in areas of bridge abutments; evidence of past Channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of stream reach channelized and disrupted. In-stream habitat greatly altered or removed entirely.
SCORE: 11	20 19 18 17 16	15 14 13 12 **11**	10 9 8 7 6	5 4 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note – channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas).	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; Waterway has been channelized for a long distance.
SCORE: 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5 – 30% of bank in reach has areas of erosion.	Moderately unstable; 30 – 60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60 – 100% of bank has erosional scars.
SCORE:(LB) **6**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 **6**	5 4 3 2 1
SCORE:(RB) **6**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 **6**	5 4 3 2 1
9. Vegetation Protection (score each bank) Note: determine left or right side by facing downstream	More than 90% of the stream bank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetative disruption through grazing or moving minimal or not evident; almost all plants allowed to grow naturally.	70 – 90% of the stream bank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50 -70% of the stream bank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the stream bank surfaces covered by vegetation; disruption of stream bank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE:(LB) **2**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0
SCORE:(RB) **2**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone > 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12 - 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6 - 12 meters; Human activities have impacted zone a great deal.	Width of riparian zone < 6 meters; little or no riparian vegetation due to human activities.
SCORE:(LB) **4**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 **4** 3 2 1 0
SCORE:(RB) **2**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0

Total Score – 87 (Marginal)

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

STREAM NAME: Sanders Creek		LOCATION:	Syracuse, NY
STATION # 2	RIVERMILE	STREAM CLASS:	Perennial
LAT:	LONG:	RIVER BASIN:	Seneca - 04140201
STORET #		AGENCY:	NYSDEC
INVESTIGATORS: J. Garcia, J. George			
FORM COMPLETED BY: J. Garcia		DATE: 11/07/06 TIME: 12:24 AM PM	REASON FOR SURVEY: Corrective Action Order

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30 – 50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10 – 30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE: 11	20 19 18 17 16	15 14 13 12 **11**	10 9 8 7 6	5 4 3 2 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE: 10	20 19 18 17 16	15 14 13 12 11	**10** 9 8 7 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pool present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
SCORE: 13	20 19 18 17 16	15 14 **13** 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20 – 50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50 – 80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE: 10	20 19 18 17 16	15 14 13 12 11	**10** 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills > 75% of the available channel; or < 25% of channel substrate is exposed.	Water fills 25 – 75% of the available channel, and/or riffle substrate are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE: 16	20 19 18 17 **16**	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some Channelization present, usually in areas of bridge abutments; evidence of past Channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of stream reach channelized and disrupted. In-stream habitat greatly altered or removed entirely.
SCORE: 8	20 19 18 17 16	15 14 13 12 11	10 9 **8** 7 6	5 4 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note – channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas).	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; Waterway has been channelized for a long distance.
SCORE: 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5 – 30% of bank in reach has areas of erosion.	Moderately unstable; 30 – 60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60 – 100% of bank has erosional scars.
SCORE:(LB) **7**	20 19 18 17 16	15 14 13 12 11	10 9 8 **7** 6	5 4 3 2 1
SCORE:(RB) **7**	20 19 18 17 16	15 14 13 12 11	10 9 8 **7** 6	5 4 3 2 1
9. Vegetation Protection (score each bank) Note: determine left or right side by facing downstream	More than 90% of the stream bank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetative disruption through grazing or moving minimal or not evident; almost all plants allowed to grow naturally.	70 – 90% of the stream bank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50 -70% of the stream bank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the stream bank surfaces covered by vegetation; disruption of stream bank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE:(LB) **6**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 **6**	5 4 3 2 1 0
SCORE:(RB) **6**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 **6**	5 4 3 2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone > 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12 - 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6 - 12 meters; Human activities have impacted zone a great deal.	Width of riparian zone < 6 meters; little or no riparian vegetation due to human activities.
SCORE:(LB) **2**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0
SCORE:(RB) **2**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 **2** 1 0

Total Score – 100 (Marginal)

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

STREAM NAME:	Sanders Creek		LOCATION:	Syracuse, NY	
STATION #	3	RIVERMILE	STREAM CLASS:	Perennial	
LAT:		LONG:	RIVER BASIN:	Seneca - 04140201	
STORET #			AGENCY:	NYSDEC	
INVESTIGATORS:	J. Garcia, J. George				
FORM COMPLETED BY:			DATE: 11/07/06	REASON FOR SURVEY:	
J. Garcia			TIME: 4:40 AM PM	Corrective Action Order	

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30 – 50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10 – 30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE: 10	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE: 7	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pool present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
SCORE: 7	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20 – 50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50 – 80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE: 19	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills > 75% of the available channel; or < 25% of channel substrate is exposed.	Water fills 25 – 75% of the available channel, and/or riffle substrate are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE: 17	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET – LOW GRADIENT STREAMS

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some Channelization present, usually in areas of bridge abutments; evidence of past Channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of stream reach channelized and disrupted. In-stream habitat greatly altered or removed entirely.
SCORE: 9	20 19 18 17 16	15 14 13 12 11	10 **9** 8 7 6	5 4 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note – channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas).	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; Waterway has been channelized for a long distance.
SCORE: 5	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	**5** 4 3 2 1 0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5 – 30% of bank in reach has areas of erosion.	Moderately unstable; 30 – 60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60 – 100% of bank has erosional scars.
SCORE:(LB) **7**	20 19 18 17 16	15 14 13 12 11	10 9 8 **7** 6	5 4 3 2 1
SCORE:(RB) **9**	20 19 18 17 16	15 14 13 12 11	10 **9** 8 7 6	5 4 3 2 1
9. Vegetation Protection (score each bank) Note: determine left or right side by facing downstream	More than 90% of the stream bank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetative disruption through grazing or moving minimal or not evident; almost all plants allowed to grow naturally.	70 – 90% of the stream bank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50 -70% of the stream bank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the stream bank surfaces covered by vegetation; disruption of stream bank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE:(LB) **1**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 **1** 0
SCORE:(RB) **10**	20 19 18 17 16	15 14 13 12 11	**10** 9 8 7 6	5 4 3 2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone > 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12 - 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6 - 12 meters; Human activities have impacted zone a great deal.	Width of riparian zone < 6 meters; little or no riparian vegetation due to human activities.
SCORE:(LB) **4**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 **4** 3 2 1 0
SCORE:(RB) **6**	20 19 18 17 16	15 14 13 12 11	10 9 8 7 **6**	5 4 3 2 1 0

Total Score – 87 (Marginal)

C

Appendix C
Sanders Creek Creek Chub
Laboratory Analytical Results

See Enclosed Compact Disk for Adobe pdf file containing these results

Appendix D
Data Evaluation and Usability Report
for Sediment and Fish Samples Collected November 2006

1.0 DATA EVALUATION

This section presents analytical data for sediment and fish samples collected in November 2006 from the Carrier Corporation, Thompson Road Facility and the quality assurance/quality control (QA/QC) evaluation and usability of those data. Samples discussed in this report were collected between November 7 and November 9, 2006. Sediment samples were submitted to Accutest Laboratories of Dayton, New Jersey (New York certification number 10983), and were reported by the laboratory in one sample delivery group (SDG): J46288. Fish tissue samples were submitted to Pace Analytical Services, Inc. of Green Bay, Wisconsin (New York certification number 11436), and were reported by the laboratory in one SDG: 878337. Table 1-1 provides an analytical summary for samples discussed in this report.

Table 1-1
Analytical Summary
Sediment and Fish Tissue Polychlorinated Biphenyl Analysis

Sample Delivery Group	Sample ID	Lab Sample ID	Date Sampled	Sample Type
J46177	ENSTMP.FAL06.SED01-CARMSTA101	J46177-1	11/8/2006	Sediment
J46177	ENS.TMP.FAL06.SED02.CARMSTA102	J46177-2	11/8/2006	Sediment
J46177	ENS.TMP.FAL06.SED03.CARMSTA201	J46177-3	11/9/2006	Sediment*
J46177	ENS.TMP.FAL06.SED04.CARMSTA202	J46177-4	11/9/2006	Sediment
J46177	ENS.TMP.FAL06SED05.CARMSTA203	J46177-5	11/9/2006	Sediment
J46177	ENS.TMP.FAL06.SED06.CARMSTA204	J46177-6	11/9/2006	Sediment
J46177	ENS.TMP.FAL06.SED07.CARMSTA205	J46177-7	11/9/2006	Sediment
J46177	ENS.TMP.FAL06.SED08.CARMSTA301	J46177-8	11/8/2006	Sediment
J46177	ENS.TMPFAL06-SED09.CARMSTA302	J46177-9	11/8/2006	Sediment
J46177	ENS.TMP.FAL06.SEDDUP.CARQSTA301	J46177-10	11/9/2006	Duplicate of SED08.CARMSTA301
J46177	ENS.TMP.FAL06.EQBK.CARE110906A	J46177-11	11/9/2006	Equipment Rinsate Blank
878337	Station1 Sample1	878337-001	11/7/2006	Fish Tissue - sample weight: 94.7g
878337	Station1 Sample2	878337-002	11/7/2006	Fish Tissue - sample weight: 77.8g
878337	Station1 Sample3	878337-003	11/7/2006	Fish Tissue - sample weight: 38.9g
878337	Station1 Sample4	878337-004	11/7/2006	Fish Tissue - sample weight: 51.7g
878337	Station1 Sample5	878337-005	11/7/2006	Fish Tissue - sample weight: 16.4g
878337	Station2 Sample1	878337-006	11/7/2006	Fish Tissue - sample weight: 158g*
878337	Station2 Sample2	878337-007	11/7/2006	Fish Tissue - sample weight: 76g
878337	Station2 Sample3	878337-008	11/7/2006	Fish Tissue - sample weight: 65.8g
878337	Station2 Sample4	878337-009	11/7/2006	Fish Tissue - sample weight: 98.6g
878337	Station2 Sample5	878337-010	11/7/2006	Fish Tissue - sample weight: 46.3g
878337	Station3 Sample1	878337-011	11/7/2006	Fish Tissue - sample weight: 91g
878337	Station3 Sample2	878337-012	11/7/2006	Fish Tissue - sample weight: 66g
878337	Station3 Sample3	878337-013	11/7/2006	Fish Tissue - sample weight: 60g
878337	Station3 Sample4	878337-014	11/7/2006	Fish Tissue - sample weight: 52.3g
878337	Station3 Sample5	878337-015	11/7/2006	Fish Tissue - sample weight: 56.9g

Note:
*Matrix spike/matrix spike duplicate was performed on samples indicated with an asterisk.

Analyses were conducted in accordance with the following methods:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW-846) U.S. Environmental Protection Agency (USEPA) Office of Solid Waste and Emergency Response, Third Edition, December 1996.

- *Determination of Total Organic Carbon in Sediment, (Lloyd Kahn Method),* U.S. Environmental Protection Agency, Region II, Environmental Services Division, Monitoring Management Branch, July 27, 1988

All samples were analyzed for polychlorinated biphenyls (PCBs) via SW-846 8082. Sediment samples were also analyzed for total organic carbon (TOC). Samples were analyzed and reported as definitive data and QC forms and raw data were submitted for data review (NYSDEC Category B-equivalent package). The elements of the data package provided by the laboratory are presented in Table 1-2.

Table 1-2
Data Package Elements

- Completed chain-of-custody documentation
- Analytical results
- Sample receipt and log-in information
- Laboratory case narrative
- **Organic QC summaries and raw data:**
  - Surrogate recoveries
  - Matrix spike/matrix spike duplicates
  - Laboratory control samples
  - Laboratory blanks
  - Initial and calibration check data
  - Retention time summaries
  - Sample and QC quantitation reports
  - Sample and QC chromatograms
  - Raw calibration data
  - Raw sample preparation bench sheets
  - Analytical run log

When the QC parameters did not fall within the specific method and laboratory guidelines, the data evaluator annotated or "flagged" the corresponding analytes where anomalies were found. The following flags were used to annotate data outside QC criteria during data evaluation.

U	**Undetected** - The analyte was present in a sample, but at a concentration less than 10 times the blank concentration for common organic constituents (methylene chloride, acetone, and 2-butanone) or five times the blank concentration for other constituents; the associated value shown is the quantitation limit after evaluation of the blank.
J	**Estimated Value** - At least one QC parameter was outside control limits.
UJ	**Undetected and Estimated** - The parameter was analyzed but not detected above the listed quantitation limit; the quantitation limit is estimated because one or more QC parameters were outside control limits.
R/UR	**Unusable Data** - At least one QC parameter grossly exceeded control limits.

These "flags" were applied to data where anomalies are noted during evaluation. The laboratory's "U" qualifier, defined as the target analyte was not detected above the laboratory's reporting limit, remained on the data unless superseded by the evaluation qualifier (e.g., "UJ" or "UR").

2.0 DATA REVIEW FINDINGS

PCB data evaluation for the Thompson Road Facility included the following parameters:

	Sediment	Fish Tissue
Completeness	*	*
Holding times	*	*
Surrogate spike recoveries		*
Instrument calibration	*	*
Matrix spike/matrix spike duplicate (MS/MSD) recoveries		*
MS/MSD precision	*	*
Laboratory control spike (LCS) results	*	*
Laboratory method blanks	*	*
Field QC blanks (equipment rinsate)	*	not applicable
Field duplicate precision		not applicable

An asterisk (*) above indicates that QC results were within criteria. Data were reviewed for completeness during the data evaluation process. When data were found to be incomplete or errors were observed, the laboratory was requested to resubmit the appropriate data so review could be completed. Raw data was reviewed and positive results were recalculated from the raw data to confirm reported values were accurate. All fish tissue data were found to be acceptable for use without qualification. The following sections describe specific sediment outliers that were qualified during the evaluation process. Data that were not flagged will not be discussed further in the following sections.

2.1 PCB Surrogate Results (Sediment)

Surrogates provide information needed to assess the accuracy of analyses. To check the accuracy in an analysis, USEPA methods require the addition of known amounts of surrogate compounds or compounds that are not likely to be found in the actual samples. If surrogate percent recoveries (%Rs) are close to the known concentrations as defined within the limits set by the laboratory, the reported target compound concentrations are assumed to be accurate. Table 1 summarizes investigative sample surrogates exhibiting recoveries outside the QC limits established by the laboratory and the qualification applied to the results.

Table 1
Sediment Surrogate Outliers

Sample ID	Dilution Factor	Lab File ID	Analyte	%R Col 1	%R Col 2	Control Limits	Qualification
CARMSTA203	1	AB61427.D	Tetrachloro-m-xylene	144*	87	37-140	None – All undiluted results were undetected and the surrogate bias was high.
CARMSTA203	5	AB61452.D	decachlorobiphenyl	181*	153*	40-151	Aroclor 1260 result (6,870 µg/kg) flagged estimated "J", potentially biased high.
CARMSTA301	1	AB61430.D	decachlorobiphenyl	188*	101	40-151	Aroclor 1254 result (1,280 µg/kg) flagged estimated "J", potentially biased high.
CARMSTA301	5	AB61453.D	decachlorobiphenyl	223*	158*	40-151	Aroclor 1260 result (8,220 µg/kg) flagged estimated "J", potentially biased high.
CARQSTA301	1	AB61432.D	Tetrachloro-m-xylene	366*	81	37-140	None – All undiluted results were undetected and the surrogate bias was high.
CARQSTA301	1	AB61432.D	decachlorobiphenyl	211*	124	40-151	None – All undiluted results were undetected and the surrogate bias was high.
CARQSTA301	20	AB61454.D	Tetrachloro-m-xylene	916*	126	37-140	Both Aroclor1254 (7,050 µg/kg) and Aroclor1260 (36,900 µg/kg) flagged estimated "J", potentially biased high.
CARQSTA301	20	AB61454.D	decachlorobiphenyl	270*	121	40-151	Both Aroclor1254 (7,050 µg/kg) and Aroclor1260 (36,900 µg/kg) flagged estimated "J", potentially biased high.

Notes:

%R	=	surrogate percent recovery
Col1	=	column 1
Col2	=	column 2
*	=	parameter was outside laboratory control limits
µg/kg	=	milligrams per kilogram

2.2 PCB MS/MSD Results (Sediment)

To assess the accuracy and precision of the analytical methods relative to the sample matrices, MS/MSD %Rs and relative percent differences (RPDs) between the duplicated MS and MSD values were determined. Ten investigative sediment samples were collected and CARMSTA201 was used for the MS/MSD analyses. Therefore, the MS/MSD frequency of 1 per 20 site samples was met. All duplicate RPDs between the MS and MSD were within the laboratory's control limits. MS/MSD recovery outliers for the Thompson Road sediment samples are presented in Table 2. As is indicated in Table 2, no qualifications were performed on samples based on MS/MSD outliers.

Table 2
Matrix Spike/Matrix Spike Duplicate Recovery Outliers

Analyte	Sample Result	Spike Conc.	MS Conc.	MSD Conc.	MS %R	D %R	QC Limits	Qualification
Aroclor 1016	ND	152	152	240	158	165*	43-161	None – Aroclor 1016 was undetected and the bias was high.
Aroclor 1260	646	152	693	688	31*	28*	37-164	None – Sample result was greater than four times the spike amount.

Notes:
MS = matrix spike
Conc. = concentration (in micrograms per liter)
MSD = matrix spike duplicate
%R = percent recovery
ND = non-detected
* = parameter was outside laboratory control limits

2.3 PCB Field Duplicate Precision (Sediment)

One sediment field duplicate pair (CARMSTA301 and CARQSTA301) was collected during the November 2006 sampling event. Field duplicate determinations are used to measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates. Precision between the field duplicate pairs were calculated and Aroclor 1254 and Aroclor 1260 had high RPDs as is shown in Table 3.

Table 3
Field Duplicate Precision Outliers

Analyte	Sample Concentration	Field Duplicate Concentration	Relative Percent Difference	Qualification
Aroclor 1254	1280	7050	138.5	Estimate both values "J"
Aroclor 1260	8220	36900	127.1	Estimate both values "J"

Both Aroclor 1254 and Aroclor 1260 were flagged as estimated "J" in samples CARMSTA301 and CARQSTA301, indicating poor duplicate precision. Laboratory chromatograms were reviewed and no laboratory quantitation errors were observed. However, both samples had different moisture contents.

Sample CARMSTA301 had a percent moisture of 33.7% while CARQSTA301 had a percent moisture of 24.9%. The differences in moisture content indicate that the sediment samples may not have been homogeneous.

3.0 Conclusions and Data Usability

PCB data for the November 2006 sediment and fish tissue samples collected at the Thompson Road Facility were reviewed independently from the laboratory to assess data quality. When a QC parameter was outside the method and review criteria, the validator qualified the results to alert the data user. All fish tissue data were acceptable without qualification. Aroclor 1254 and Aroclor1260 were qualified as estimated in samples CARMSTA301 and CARQSTA301 due to poor field duplicate precision and elevated surrogate recoveries (indicating potential high bias). Aroclor 1260 was flagged estimated in CARMSTA203 due to elevated surrogate recoveries, indicating potential high bias. All remaining sediment PCB data were determined to be usable without qualification. Although some analytes were qualified, no positive results were rejected; therefore results are usable, with the appropriate qualification, as previously detailed. Results that were estimated during validation may be biased high or low but are acceptable for interpretation. Analytical results after data review can be found in Attachment A-1.

Attachment D-1
Analytical Results after Data Review

Table D-1
Carrier Corporation, Thompson Road Facility
November 2006 Sediment Results after Data Review

Sample ID:		ENS.TMP.FAL06.EQBK.CARE110906A	
Lab Sample ID:		J46177-11	
Date Sampled:		11/9/2006	
Aroclor 1016	µg/l	0.10	U
Aroclor 1221	µg/l	0.52	U
Aroclor 1232	µg/l	0.43	U
Aroclor 1242	µg/l	0.18	U
Aroclor 1248	µg/l	0.17	U
Aroclor 1254	µg/l	0.12	U
Aroclor 1260	µg/l	0.13	U

Sample ID:		ENS.TMP.FAL06.SED02.CARMSTA102		ENS.TMP.FAL06.SED03.CARMSTA201		ENS.TMP.FAL06.SED04.CARMSTA202		ENS.TMP.FAL06.SED06.CARMSTA204		ENS.TMP.FAL06.SED07.CARMSTA205	
Lab Sample ID:		J46177-2		J46177-3		J46177-4		J46177-6		J46177-7	
Date Sampled:		11/8/2006		11/9/2006		11/9/2006		11/9/2006		11/9/2006	
Aroclor 1016	µg/kg	9.1	U	7.3	U	8.7	U	7.9	U	7.6	U
Aroclor 1221	µg/kg	29	U	23	U	27	U	25	U	24	U
Aroclor 1232	µg/kg	26	U	21	U	25	U	22	U	22	U
Aroclor 1242	µg/kg	15	U	12	U	15	U	13	U	13	U
Aroclor 1248	µg/kg	16	U	13	U	16	U	14	U	14	U
Aroclor 1254	µg/kg	107		202		22	U	69.4		450	
Aroclor 1260	µg/kg	333		646		9.2	U	77.6		2160	
Total Organic Carbon	mg/kg	7360		2360		7370		1200		6110	
Solids, Percent	%	69.0		86.6		72.6		80.1		82.7	

Sample ID:		ENS.TMP.FAL06.SED08.CARMSTA301		ENS.TMP.FAL06.SEDDUP.CARQSTA301		ENS.TMP.FAL06SED05.CARMSTA203		ENS.TMPFAL06-SED09.CARMSTA302		ENSTMP.FAL06.SED01.CARMSTA101	
Lab Sample ID:		J46177-8		J46177-10		J46177-5		J46177-9		J46177-1	
Date Sampled:		11/8/2006		11/9/2006		11/9/2006		11/8/2006		11/8/2006	
Aroclor 1016	µg/kg	9.4	U	8.3	U	7.7	U	11	U	11	U
Aroclor 1221	µg/kg	30	U	26	U	24	U	35	U	35	U
Aroclor 1232	µg/kg	27	U	24	U	22	U	32	U	31	U
Aroclor 1242	µg/kg	16	U	14	U	13	U	18	U	18	U
Aroclor 1248	µg/kg	17	U	15	U	14	U	20	U	20	U
Aroclor 1254	µg/kg	1280	**J**	7050	**J**	19	U	141		27	U
Aroclor 1260	µg/kg	8220	**J**	36900	**J**	6870	**J**	481		12	U
Total Organic Carbon	mg/kg	22700		28400		7970		40400		30300	
Solids, Percent	%	66.3		75.1		81.6		57.3		57.6	

Notes:
All results are on a dry weight basis.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
U = undetected
J = Value was estimated during data review and are bolded.

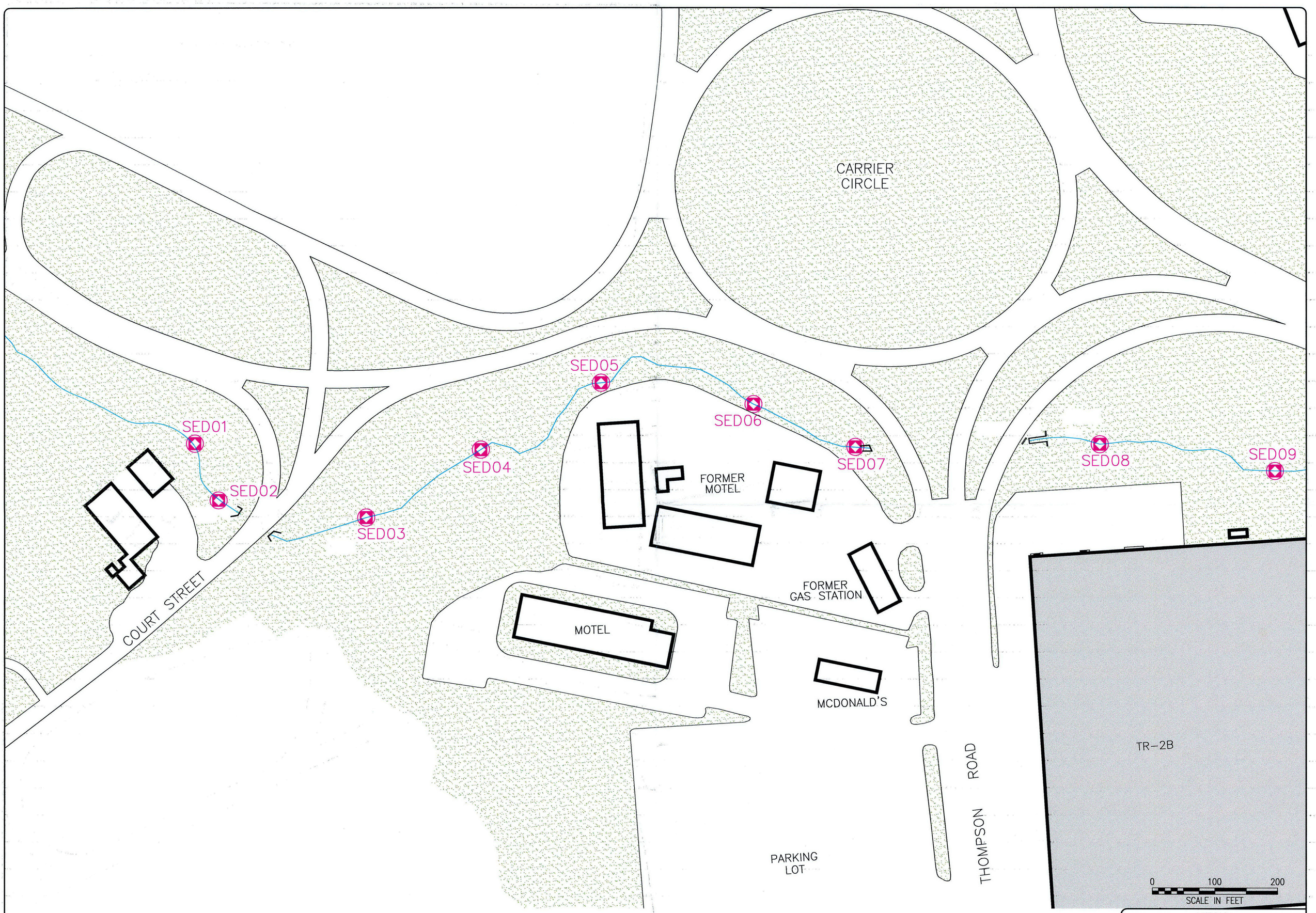
Table D-2
Carrier Corporation, Thompson Road Facility
November 2006 Fish Tissue Results after Data Review

Sample ID:		Station1 Sample1 94.7g		Station1 Sample2 77.8g		Station1 Sample3 38.9g		Station1 Sample4 51.7g		Station1 Sample5 16.4g	
Lab Sample ID:		878337-001		878337-002		878337-003		878337-004		878337-005	
Date Sampled:		11/7/2006		11/7/2006		11/7/2006		11/7/2006		11/7/2006	
Aroclor 1016	µg/kg	380	U	190	U	57	U	150	U	470	U
Aroclor 1221	µg/kg	380	U	190	U	57	U	150	U	470	U
Aroclor 1232	µg/kg	380	U	190	U	57	U	150	U	470	U
Aroclor 1242	µg/kg	380	U	190	U	57	U	150	U	470	U
Aroclor 1248	µg/kg	380	U	190	U	57	U	150	U	470	U
Aroclor 1254	µg/kg	1500		880		290		940		2200	
Aroclor 1260	µg/kg	5600		2500		1100		2200		6700	
Total PCBs	µg/kg	7100		3400		1400		3200		8800	
Percent Lipids	%	2.41		1.98		0.99		1.45		4.30	

Sample ID:		Station2 Sample1 158g		Station2 Sample2 76g		Station2 Sample3 65.8g		Station2 Sample4 98.6g		Station2 Sample5 46.3g	
Lab Sample ID:		878337-006		878337-007		878337-008		878337-009		878337-010	
Date Sampled:		11/7/2006		11/7/2006		11/7/2006		11/7/2006		11/7/2006	
Aroclor 1016	µg/kg	380	U	280	U	150	U	280	U	190	U
Aroclor 1221	µg/kg	380	U	280	U	150	U	280	U	190	U
Aroclor 1232	µg/kg	380	U	280	U	150	U	280	U	190	U
Aroclor 1242	µg/kg	380	U	280	U	150	U	280	U	190	U
Aroclor 1248	µg/kg	380	U	280	U	150	U	280	U	190	U
Aroclor 1254	µg/kg	1500		1200		980		1400		1600	
Aroclor 1260	µg/kg	4600		3800		1800		3500		2900	
Total PCBs	µg/kg	6100		5000		2800		4900		4500	
Percent Lipids	%	4.39		1.40		2.52		2.62		4.12	

Sample ID:		Station3 Sample1 91g		Station3 Sample2 66g		Station3 Sample3 60g		Station3 Sample4 52.3g		Station3 Sample5 56.9g	
Lab Sample ID:		878337-011		878337-012		878337-013		878337-014		878337-015	
Date Sampled:		11/7/2006		11/7/2006		11/7/2006		11/7/2006		11/7/2006	
Aroclor 1016	µg/kg	95	U	150	U	190	U	170	U	380	U
Aroclor 1221	µg/kg	95	U	150	U	190	U	170	U	380	U
Aroclor 1232	µg/kg	95	U	150	U	190	U	170	U	380	U
Aroclor 1242	µg/kg	95	U	150	U	190	U	170	U	380	U
Aroclor 1248	µg/kg	95	U	150	U	190	U	170	U	380	U
Aroclor 1254	µg/kg	610		1200		1100		1300		1600	
Aroclor 1260	µg/kg	1400		1600		2100		2300		3000	
Total PCBs	µg/kg	2000		2800		3200		3500		4700	
Percent Lipids	%	0.82		3.00		2.64		2.69		4.70	

Notes:
All results are on a wet weight basis.
mg/kg = milligrams per kilogram
U = undetected



LEGEND

BUILDING

CARRIER SEDIMENT SAMPLE LOCATION (NOV 2006)

FIGURE 2
PCB SEDIMENT SAMPLE LOCATIONS
NOV 2006
CARRIER FACILITY THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY: J.G.	
DRAWN BY: E.R.	
DWG DATE: 07AUG07	
DWG NO: 803666R019	

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MEMPHIS, TENNESSEE

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