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Subj: Fish Tissue Sampling at Herrick Hollow Creek

File: 824.006-S

Dear Ms. Chang:

As part of the remedial activities at the Richardson Hill Road Landfill (RHRL) site, the U.S. Environmental Protection Agency (USEPA) has directed Amphenol and Honeywell (The Respondents) to conduct a single fish tissue sampling event prior to the start of the Herrick Hollow Creek (HHC) final restoration. The following describes the proposed sample collection and analysis methods. This sampling event will be conducted in accordance with the Sampling, Analysis, and Monitoring Plan (SAMP), included as Appendix A in the Remedial Design Work Plan (RDWP) (Parsons, August 1999).

A. Proposed Sample Locations and Target Fish Species

Sample Locations

Five (5) locations will be sampled along Herrick Hollow Creek within the limits of the RHRL project area. Four of these locations will be selected based on their habitat availability. These locations will be selected based on the presence of deep rifles and/or pools with a minimum depth of 12-inches of water. Larger pools and rifles will be selected over those of a smaller size. Other characteristics such as the presence of vegetation, both in and overhanging the water, will also be noted during the selection of sampling sites. The fifth location will consist of the ponded area known as South Pond at the northern terminus of the stream. Each location will be assigned a unique sampling point number and surveyed using GPS equipment for future reference.

Sample Species

During this study, predatory and forage fish tissue samples will be collected at each of the five sampling locations (SAMP, August 1999). Under optimal conditions, three samples of the same predatory fish species will be collected at each of the five monitoring locations, for a total of 15 samples. Preferred sampling for the forage species is to collect three to five

individuals of the same species at each sampling location, for a minimum total of 15 samples (SAMP, August 1999).

The preferred predatory species is a trout; however, other species such as sunfish or bullhead may be substituted if trout populations are found to be inadequate or nonexistent within the project area. The preferred forage fish species will be based on the availability of the aquatic system; however, creek chub and shiner species are often commonly used. Substitutions of preferred species will be made if adequate numbers or sizes of these species are not available. In the event that no predatory species exist in the aquatic system, or inadequate numbers are found, then one additional composite of the forage species will be sampled at each location (SAMP, 1999). In the event that there is an insufficient mass of any one species for analysis, more than one species may be combined (SAMP, 1999).

Size Requirements

If possible, predatory fish will only be collected if they are large enough to be consumed by a human population. The minimum size that would meet this requirement is five inches (5”). Collected fish will comply with the legal angling size requirement for all species, if established by the New York State Department of Environmental Conservation (NYSDEC) in its Freshwater Fishing Regulations Guide (2006-2008).

Fish that do not meet the minimum size requirement for this study will be released back into Herrick Hollow Creek at their respective capture locations. A tally of the total number of each fish species captured and the total amount of time spent sampling will be recorded as part of this study. Detailed data will only be collected on fish meeting the minimum size requirements. Fish that meet the minimum size requirements for this study will be retained and preserved for laboratory analysis.

Sample Collection Methods

Herrick Hollow Creek is a shallow, slow-flowing, cool water stream with a small, wider semi-ponded area located near the northern limits of the project corridor. This section of Herrick Hollow Creek comprises the headwaters of this stream. Electrofishing methods will be used to collect fish specimens at the four stream sampling locations. Electrofishing is the use of electricity to capture fish. The electricity is generated by a system whereby a high voltage potential is applied between two electrodes that are placed in the water. Direct electrical current will be used in this study. Direct current leaves the cathode (negative electrode) and enters the anode (positive electrode), flowing in one direction only. A Smith-Root LR-24 Electrofisher will be used to sample fish populations in Herrick Hollow Creek. Electrofishing is the most efficient, non-selective method available that also results in minimal damage to captured or stunned fish. The total time spent electrofishing will remain similar for the four sampling locations in which this method will be used. One visit at each of these four sites will be made since these pools are limited in size.

Based on previous site visits, South Pond may be too wide and too deep an area to be effectively sampled using the electrofishing methods outlined above. The substrate in this area is very soft, leading to mobility and visibility issues when trying to net stunned fish. Assuming that field conditions in spring 2008 still hinder the usage of electrofishing equipment within South Pond, seining will be used to capture fish in this area. Seining is inexpensive and easily operated, though it is not the most efficient method since fish can evade the net during seining. Based on the known site conditions at this location, seining is determined to be the best alternative for fish sampling in this area, if electrofishing cannot be performed efficiently.

An 8-feet deep seine net that has ¼-inch mesh size and is twenty-feet long will be purchased from PondSolutions and used to conduct fish sampling in South Pond, sampling location number 5. A maximum of three passes with the seine net will be made at an attempt to capture enough fish to satisfy the sampling requirements. Seining will be conducted at the beginning or the end of the sampling day in order to avoid the more direct mid-day sunlight and enhance the potential for success.

Data will be collected on captured fish that meet the minimal size limit for this study. These specimens will be identified to species, measured for total body length, weighed for total body weight, and preserved for future processing and shipment. The total body length is the length from the anterior-most part of the fish to the tip of the longest caudal fin ray (when the lobes of the caudal fin are compressed dorsoventrally) (Anderson and Gutreuter, 1983). General health conditions of captured fish will also be noted, including deformities or skin abnormalities.

A minimum two-person field crew will be utilized during sampling activities. At least two members of the field crew will be certified in cardiopulmonary resuscitation (CPR). Members of the field crew will be familiar with local and regional ichthyofauna. Sources of extraneous tissue contamination will be minimized in the field to the extent possible. Appropriate steps will be taken to minimize further harm or damage to collected fish samples. The work to be done on this site will be done in compliance with the Health and Safety Plan (Parsons, 2002).

A NYSDEC license to collect and possess (ECL 11-0515) will be acquired prior to sampling at the site. All NYS regulations Environmental Conservation Laws will need to be followed as part of this licensure. The data collected as part of this sampling event will be tabulated and submitted to the NYSDEC as part of the permit requirements.

Analytical Methods

A total of 15 predatory fish will be collected and divided into 5 composite samples (3 fish in each sample collected from the same sampling location). These composite samples will be

analyzed first using fillet data, and then using offal data (the mathematically recombined whole body burden – everything except the fillet). Filleting and recombining the reminder of the fish will be executed in the laboratory just prior to analysis. Samples will be submitted to the laboratory as whole body specimens.

A total of 15 forage (non-predatory) fish will be sampled and divided into 5 composite samples (3 fish in each sample collected from the same sampling location). These 5 composite samples will be analyzed in the laboratory as whole body specimens.

In order to assure the quality of the laboratory analysis on this project, two pairs of MS/MSD samples will be collected for both predatory and non-predatory fish species, as well as a duplicate sample consisting of two predatory and two non-predatory fish. This results in the collection of 12 additional fish.

During sampling, all fish to be retained for laboratory analysis will be segregated by sampling location and placed on dry ice immediately after collection. Specimens will be wrapped individually with aluminum foil and placed in waterproof plastic bags. Each bag will be labeled externally with the sample location, designated sample number, total length, and whole body weight (CHAPTER 6). Samples will be shipped frozen as whole body specimens to the laboratory in accordance with Chain-of-Custody protocols (SAMP, August 1999).

Once received at the laboratory, the sample fillets will be removed in accordance with New York State Department of Environmental Conservation (NYSDEC) fish filleting methods (NYSDEC, 1995) and the offals will be retained. The fillet and offal will be weighed individually to the nearest gram and will be analyzed individually for PCB and total lipid content. The USEPA analytical method used for PCB and lipid examination will be SW846 8082.

B. Works Cited

Anderson, R.O., and S.J. Gutreuter. 1983. Length, weight, and associated structural indices. pp. 283-300. In: *Fisheries Techniques*. L.A. Nielson and D.L. Johnson (eds). American Fisheries Society, Bethesda, MD.

NYSDEC. 1995. Analytical Services Protocols. Bureau of Technical Services and Research, New York State Department of Environmental Conservation. Albany, New York. October 1995.

NYSDEC. 2006. Freshwater Fishing Regulations Guide, 2006-2008. New York State Department of Environmental Conservation. Albany, New York. http://www.dec.ny.gov/outdoor/7917.html.

Parsons Engineering Science, Inc. August 1999. Sampling, Analysis and Monitoring Plan for Pre-design and Design Activities at the Richardson Hill Road Landfill. Liverpool, New York.

Parsons Engineering Science, Inc. February 2002, revised July 2002. Final (100%) Design for the Richardson Hill Road Landfill.

In keeping with the projected project start up schedule and due to the unique nature and limited availability of the fish shocking equipment, it was imperative the equipment be reserved and the sampling be tentatively scheduled for the week of May 12th. Understanding this, we respectfully request your review and comments be expedited to the greatest extent possible to accommodate the schedule to assure the completion of this event prior to the start of further remedial activities at the site. Upon completion of the fieldwork component of this event, all collected fish samples will be shipped to an EPA approved lab, for PCB analysis.

Should you have any questions or wish to discuss this further please feel free to contact me or Johanna Duffy in our Syracuse Office @ (315) 457-5200 at any time. Thank you.

Very truly yours,

BARTON & LOGUIDICE, P.C.

John J. Condino
Sr. Project Manager

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