

1.0 Site Background

The sites that will be sampled are Lake Michigan recreational beaches located in the Cities of Chicago, Evanston, and Wilmette in Cook and Lake Counties, Illinois. The lake is a freshwater body used for recreational and business use. The nearest residents are located within 0.05 miles to the west.

The contaminants of concern (COC) that will be sampled are fecal coliform and E. coli bacteria. The suspected contamination is a result from human and animal fecal matter. The physical threat to the population at risk is illness and possible death due to E. coli bacteria exposure. Historically bacterial levels have been the highest during the summer months, when recreational use of the waterway is highest.

The Sierra Club proposes to sample along these beaches in order to help monitor, educate, and determine the source of the health risks posed by fecal coliform and E Coli bacteria.

2.0 Sampling Design

Fresh water will be sampled from Lake Michigan beaches for fecal coliform and E Coli bacteria analysis. Samples will be collected from the public beach shoreline on **SATURDAY** from sand beaches at a depth of **24 inches**. One sample per sampling event will be collected from each of the following locations: 63rd Street Beach, Montrose Beach, Lee Street Beach and North Shore Channel in Evanston, and Gillson Beach in Wilmette. It is important for **ever volunteer to collect a sample in the same location**. Below is a description of where you should collect samples for each beach.

63rd Street Beach

In front of the field house

Montrose Beach

In front of the food shack (white and blue building on east end of beach).

Lee Street Beach

Lee Street runs parallel between Dempster and Main. Take Sheridan Road and then turn east on Lee Street. There is a Lakeshore Boulevard that runs along the beach. Parked in front of the beach and walked in. There are three life guard chairs and **sample just north of the furthest north chair**. If you arrive before 10:30, you should not have a problem with the parking attendant.

Gillson Beach also known as Wilmette Beach

At the south end of the beach, **near the 'guarded' beach with the fence as its boundary, waded in about 20 feet to where the water is about two feet. Use the sign about 20 feet south of the fence as your reference point**. It is open to the public with ample parking off hours. You can try and persuaded the parking attendant to let you drive into the paying customer parking lot for the purpose of sample collection.

North Shore Channel

north of the Howard Street treatment plant, is at the southeast corner of the bridge at Bridge Street in Evanston

3.0 Sampling and Analysis

Information pertinent to sampling, such as the sample container types and the quantity to be collected at each sampling location, the preservation method to be used, and the sample holding times follow.

A surface water sample will be collected by direct sampling with a United States Environmental Protection Agency (U.S. EPA) sterile glass jar. The Direct Method will be employed, requiring the sampler to dip the container directly into the water source to fill it, and immediately securing the lid to avoid any potential cross contamination. The samples must be immediately placed into a cooler with ice to keep a preservation temperature of 4 degrees Celsius, 29 degrees Fahrenheit. A personal cooler must be brought that is of sufficient size to hold the sample as well as adequate ice to surround the glass jar. All sampling will take place on Saturday morning, allowing time to deliver the sample to the homes of the Cindy Salopek and Julie Burns located at 5440 North Winthrop Apts. 2E and 3E, Chicago between 9.30-12 on Saturday. One of them will be home on Saturdays to receive the samples.

4.0 Standard Operating Procedures

4.1 Sampling Standard Operating Procedures

The following Standard Operating Procedures (SOPs) will be implemented for this project. These are typically applicable procedures, which may be varied or changed as required, dependent on-site conditions, equipment limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final project deliverables.

Sampling Equipment Decontamination

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances. Since dedicated sample containers will be used for these field activities, no decontamination procedures are warranted. It is required that the sampler fill and rinse the sampling jar three times before taking the sample. However, samplers should use clean polyethylene gloves during sampling to prevent cross contamination and to avoid any possible health risks.

Surface Water Sampling

This sampling activity will employ the Direct sampling method. This method involves taking the approved container and dipping it directly into the water source, and then immediately securing the lid to avoid cross contamination. The sample jar should be a minimum of three

quarters full. Samplers should use clean polyethylene gloves during sampling to prevent cross contamination and to avoid any possible health risks.

4.2 Sample Documentation

The sampling checklist MUST be completed for each sample collected (see attached checklist). This checklist will include items like present weather conditions and recent weather events, such as storms. This information will be entered into a database to assist in creating a clearer picture of water conditions over the summer months. The checklist is to be dropped off with the sample at the volunteer laboratory location. All sample documents should be completed legibly and in ink. Any corrections or revisions will be made by lining through the original entry and initialing the change.

4.3 Sample Handling and Shipment

Each of the sample bottles will be sealed and capped. Sealed bottles will be placed in a containers packed with ice. **On Saturday, the water sample and checklist should be taken to the homes of Cindy Salopek and Julie Burns located at 5440 North Winthrop Apts. 2E and 3E, Chicago between 9.30-12 on Saturday. One of them will be home on Saturdays to receive the sample and checklist.**

5.0 Basic Instruction

A samplers first concern should be their safety. Before leaving for the sampling site, be sure to have all necessary equipment, including protective gear. After arriving at the site, the sampler should check all equipment again, to verify cleanliness and soundness. Weather conditions should be noticed. Since this sampling takes place at a large body of water, the sampler should be sure to take note of high waves, bad weather, undertow warnings, or other such potential hazards. Since these are public areas, the sampler should also exercise common caution in regards to suspicious people, dogs, and other risks found in public places. If the sampler senses any danger at the site, they should reschedule the sampling. The sampler should be aware of the contaminant they are sampling for, fecal coliform and E Coli bacteria.

The sampler will be collecting the water to be tested by utilizing the Direct Method by using polyethylene gloves. This Direct sampling method means to dip the jar directly into the water and filling at least three quarters of the container. They must then immediately cap the jar with a dedicated lid. The sampler should take every precaution to avoid allowing any other substance or debris into the sample, as this could lead to cross contamination and an inaccurate conclusion. Any sand, silt, or other debris that may be a result of turbid water is acceptable. Any debris that may blow into the container if it is left for a few minutes on the sand is not. It is also important to avoid letting sand or another substance get on the threads of the jar lid, as this can affect the seal. The seal must be tight. Any compromise in the seal can allow for cross contamination.

After sample collection, the sample must be labeled. Be sure the surface of the jar is dry and will accept the label. It is recommended to fill out the sections of the label that can be completed before sampling. After labeling, the sample must immediately be placed into the cooler packed with ice to preserve the sample. Place the jar into a watertight plastic bag to avoid smearing or loosening the label. Bring the sample immediately home of the individual performing the sample analysis, being sure to accurately fill out the Sampling Checklist.

Sampling QA/QC Work Plan



Sierra Club Chicago Groups Lake Michigan Shore Program

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Sierra Club

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Materials List for Sierra Club 2003 Lakeshore Sampling Project

Sterile Glass jar

Lid

Rubber or vinyl gloves

Cooler, plastic or Styrofoam

Ice packs, or well-packaged ice

Rubber boots or waders

Paper towels or rags

Garbage bags

Anti-bacterial hand wipes or rinse

Sampling Checklist

Adhesive labels

Pen with waterproof ink or wax pencil

Tape or bands (to secure cooler lids)

Lake Michigan Sampling Check List

Samplers name _____

Date sample was collected _____

Where sample was collected _____

Time of day sample was collected _____

Wind Direction _____ (from the north, southeast, etc)

Wind Speed (mph) _____

Weather Conditions (please fill out / circle all that applies)

Sunny Yes ___ No ___

Rainy Yes ___ No ___

Overcast Yes ___ No ___

Temperature _____ degrees Farenheight

Rain in last three days? Yes ___ No ___

If yes, heavy rain, or mild? Heavy ___ Mild ___

Water Conditions along Beach

Cloudy Yes ___ No ___

Foaming Yes ___ No ___

Clear Yes ___ No ___

Waves Yes ___ No ___ List height in feet _____

Odor to water Yes ___ No ___

Were dogs on the beach? Yes ___ No ___

if yes, approximate number of dogs _____

if yes, how many were on leashes _____

Were any locks opened in the past seven days? Yes ___ No ___

If yes, which ones? what date? _____

Were there any unusual circumstances or observations during the sampling procedure? If so, please explain:

Signature _____

Please return this completed form to Cindy Salopek and Julie Burns' home located at 5440 North Winthrop Apts. 2E and 3E, Chicago between 9.30-12 on Saturday.