

**NEW YORK**  
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**HEALTH**

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May 2014

Mr. Tom Alworth, Deputy Commissioner  
NYS Office of Parks, Recreation & Historic Preservation  
625 Broadway  
Albany, New York 12238

Mr. Patrick Bradford, Counsel  
NYS Office of Parks, Recreation & Historic Preservation  
625 Broadway  
Albany, New York 12238

Re: Buffalo Harbor State Park Proposal  
Preliminary Data Review  
Buffalo, Erie County

Dear Mr. Alworth and Mr. Bradford:

Staff from the New York State Department of Health (Department) Center for Environmental Health (CEH) reviewed the data and information provided to us by the New York State Office of Parks, Recreation & Historic Preservation (OPR&HP) specific to the Buffalo Harbor State Park proposed bathing beach and surrounding areas including the Niagara Frontier Transportation Authority (NFTA) Boat Harbor Park property. The Department's understanding is that there are no plans to permit swimming in 2014 and further study will be undertaken to determine whether a bathing beach will be established in the future. To evaluate the feasibility of this project as well as expanded public use opportunities at the NFTA Boat Harbor Park, in late October 2013, samples were collected by Ecology and Environment, Inc., to evaluate environmental conditions in and near the proposed beach and at the NFTA property. The media sampled included sediment, surface (lake) water, storm water discharges, soil/fill, and groundwater. The samples were analyzed for chemical constituents and bacteriologic parameters. Staff also reviewed historic data and information. This letter provides the Department interpretation of these data and information along with guidance for additional sampling and mitigation measures in the context of the proposed future use of this park specific to the bathing beach area followed by the NFTA Boat Harbor Park property.

## **Bathing Beach**

### **I. Sediments**

Sediment samples were collected from a total of thirteen borings located within the proposed swim area and within areas surrounding the proposed swim area. In general, two to three sediment samples were collected at each boring location to evaluate surface sediment quality (~0-1 foot below the sediment surface), sediments below the surface (~2-3 feet), and sediments

at depth. The samples were analyzed for volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

The Department evaluated the sediment sample results and they do not represent an exposure concern for use of the subject property as a bathing beach.

## **II. Surface Water**

Surface water samples were collected from thirteen locations coinciding with the sediment boring locations. The samples were analyzed for bacteriologic parameters, general chemistry, volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

The Department evaluated the chemical analyses results and they do not represent an exposure concern for use of the subject property as a bathing beach. However, if the area is opened as a bathing beach and should an activity occur that could influence the chemical composition of the water, including but not limited to a petroleum release within the adjacent navigational channel or dredging activities, additional sampling for chemical analyses may be warranted.

With respect to the bacteriologic parameters, the number of samples analyzed for bacterial indicators are not sufficient to determine if the beach is in compliance with the bacterial water quality requirements of the State Sanitary Code. A sanitary survey is also required to determine the adequacy of proposed additional sampling locations and time periods that samples are taken. Several samples contained elevated concentrations of enterococci bacteria when compared to State and Federal water quality standards. Additional sampling and assessment should be performed to characterize the source(s) of the indicator bacteria and determine if the beach complies with ambient (long-term) water quality criteria standards. Additional sampling after rainfall events of varying magnitudes and other environmental conditions that may affect water quality should also be considered. If the area is opened as a bathing beach, routine monitoring of surface water for bacterial indicators is required by the Federal Beaches Environmental and Coastal Health (BEACH) Act.

## **III. Storm Water Discharges/Surface Water Runoff**

The closest storm water discharge locations to the beach, which includes one location south of the proposed beach and one location north of the NFTA Boat Harbor Park, were sampled following a rainfall event. In addition, three samples were collected from the shoreline area following a rain event to characterize storm water runoff from the proposed beach area. The samples were analyzed for bacteriologic parameters, general chemistry, volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

The Department evaluated the chemical analyses results of the storm water discharges and surface water runoff and these would not represent an exposure concern for use of the subject property as a bathing beach.

The bacterial indicator analyses showed elevated concentrations of *E. coli*, fecal coliform, and enterococci bacteria in samples collected from the storm water outfall south of the beach. Additional sampling and assessment should be performed to: characterize the magnitude of precipitation events that result in increased concentrations of indicator bacteria; determine the source(s) of the indicator bacteria; and assess the potential impact of this outfall on the water quality in the designated swimming area. If the area is opened as a bathing beach, the results of routine bacterial monitoring of surface water can be used to assess the impact of storm water and runoff to inform decision making on future additional monitoring.

#### **IV. Soil/Fill**

Surface soil and subsurface soil samples were collected from the proposed bathing beach and surrounding areas to evaluate soil quality and conditions. Surface samples (0-0.5') were collected from six locations, and near surface and subsurface samples were collected from nine additional locations. Detailed field notes and boring/monitoring well logs were collected during the sampling to document observations. The samples were analyzed for volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

The sample results, field notes, and logs indicate the presence of a surface cover varying in depth between 0.5' - 4' thick, generally comprised of sand and gravel, underlain by several feet of non-native fill materials that are heterogeneous in nature.

Based on information provided by your Office regarding typical activities conducted at a State Park, the Department understands that patrons of a bathing beach dig holes at average depths of 0.5-1' deep and that some holes have been observed at depths up to 2.5'. Based on this information and the physical and chemical features of the non-native fill materials identified below the 0.5' - 4' of surface cover present at the proposed beach area, the current environmental conditions represent an exposure concern and possibly an injury risk for use of the subject property as a bathing beach.

The Department recommends that the conditions of the fill be further characterized. In addition, we advise use of a cover system that provides an adequate barrier to mitigate the potential for contact with fill materials. Installation of such a system may be done in addition to or independent of excavation. The cover materials should, at minimum, meet the soil cleanup objectives for restricted-residential use per Table 375-6.8(b) of 6 NYCRR Part 375. The Department also recommends that a demarcation layer be installed between any existing fill and the cover system to provide a visible indicator for the purposes of property management. Such cover systems are commonly used within the New York State Department of Environmental Conservation (DEC) remedial programs and are considered an acceptable engineering control to minimize the potential for direct contact exposure to protect human health. The lateral extent, thickness, and composition of the cover system should consider the beach use, patron activities, wave action, erosion control, the accessibility of the fill materials (including along the shoreline), and other parameters. To ensure long-term maintenance and effectiveness of the cover system, a property management plan would be necessary.

#### **V. Groundwater**

Five groundwater samples were collected from the bathing beach area. The depth to groundwater varies from shallow depths of ~1-2 feet below the ground surface near the shore to 8' at distance from the shore. The samples were analyzed for volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

The Department evaluated the chemical analyses results and pH levels. Due to the high pH levels, the Department recommends that the cover system design reduce the potential for contact with groundwater. Shallow groundwater on the subject property is not considered a suitable source of water for potable or non-potable purposes and the use of public water is advised if water is needed at the beach.

### **NFTA Boat Harbor Park Property**

#### **I. Soil**

Near surface soil and subsurface soil samples were collected from the NFTA Boat Harbor Park property, which reportedly contains formerly dredged sediments from the Buffalo Harbor and fill

materials from nearby properties. Near surface (0-2') and subsurface samples (depths up to 19') were collected from four locations. Detailed field notes and boring/monitoring well logs were collected during the sampling to document observations. The samples were analyzed for volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs. As part of our review, the Department also examined historic sample results collected in 1989 and 2004.

The sample results, field notes, and logs indicate the presence of a surface cover comprised of a 1' thick clay layer with some sand and/or a 0.5' thick composite material underlain by sandy clay and fill. Below this surface cover, are heterogeneous non-native fill materials and dredge spoils.

The Department understands that there are plans for the coming summer to expand the recreational activities and opportunities at the property to accommodate movie nights and concerts with lawn seating, farmer and flea markets, special events, restrooms, and other activities. These activities are consistent with previous summers activities and, in general, the current clay, sand, gravel, and composite surface materials; the existing grass cover; the pedestrian path; the parking area; and the rip-rap shoreline provide sufficient cover and a barrier to prevent contact to the existing dredge and fill materials. However, due to data limitations and the variable nature of the disposed spoils and fill materials, it is difficult to evaluate the overall quality of shallow surface conditions across the entire property and the thickness of cover materials across the property.

The Department recommends maintenance of all existing cover systems including soil overlying dredge spoils and impacted fill. When improvements are being made to this area, such as to accommodate the proposed playground and pavilions, and as a conservative measure, the Department recommends that existing cover systems be improved in areas where human contact with soil is likely, based on the proposed use. This could be achieved by applying additional topsoil and/or other cover materials (which can include buildings, structures, or pavement). Any exposed soil areas, including the area south of the main parking lot, should be covered and/or planted with grass to prevent erosion and to reduce dust and direct contact. Any ground intrusive activities, such as soil excavation and reworking should be done with advance consultation with the NYSDEC. To ensure long-term maintenance and effectiveness of the cover system, a property management plan would be necessary.

## **II. Groundwater**

Three groundwater samples were collected from the NFTA Boat Harbor Park property. The depth to groundwater varies from shallow depths of ~6 feet below the ground surface to ~14 feet in areas closer to the shore. The samples were analyzed for volatile organic compounds, semi volatile organic compounds, metals, pesticides, and PCBs.

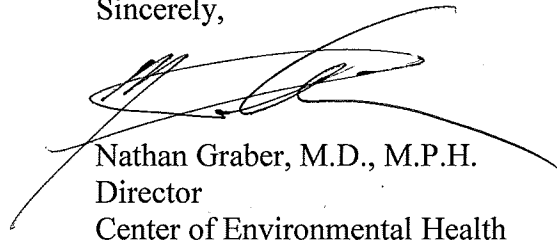
The Department examined the chemical analyses results and pH levels. Based on these results, groundwater on the subject property is not considered a suitable source of water for potable or non-potable purposes and the use of public water is advised should water be provided to patrons of the property for any use.

As part of our evaluation, the Department examined whether groundwater quality at the NFTA property is influencing groundwater quality at the beach or surface water quality in the lake. The impacts to the groundwater quality at the NFTA property do not appear to have a measurable effect on water quality at the proposed beach or to surface water in the lake.

The Department appreciates the opportunity to work with your Office on this project and encourages the continued engagement with the DEC and our Department as plans are further

developed to expand public use of these properties. Should you have any questions pertaining to the content of this letter, please contact Mr. Tim Shay at 518-402-7600.

Sincerely,



Nathan Graber, M.D., M.P.H.  
Director  
Center of Environmental Health

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