The Environmental Collaborative
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September 10, 2010

Re: Results of Wetland and Stream Delineation
Honeoye Falls Quarry - Proposed Expansion Area
Towns of Avon and Rush, Livingston and Monroe Counties, New York

Dear Mike:

This letter is a follow-up to the wetland delineation that I conducted on July 1, 2010 on the above-referenced property. The following is a brief discussion of the criteria used to determine the extent of the wetland and other water resources on the property and the results of the delineation.

General Overview

Waters of the United States, as defined by the U.S. Army Corps of Engineers (Corps), include rivers, streams (permanent and intermittent), lakes, ponds, and wetlands (except certain isolated wetlands and upper-reach [ephemeral] streams). The definition of waters of the United States are given in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. FWS/OBS-79/31. Washington, DC: U.S. Fish and Wildlife Service). However, wetlands as a subcategory of waters of the United States, are identified and delineated based on two separate documents, the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory. 1987. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS) and the 2009 *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region*.

Wetlands are created by the presence of water in an area, whether it is standing water on the surface or saturated soils. The prolonged presence of water in an area influences the type of vegetation that can survive in this condition and also creates soil characteristics that reflect this condition. Therefore, wetlands are identified and delineated based on the presence of three wetland indicators: wetland vegetation, hydric soils, and wetland hydrology. According to the 1987 Corps Manual and 2009 Supplement, all three wetland indicators must be present for an area to be considered a wetland (although there are some exceptions to this rule).

On some sites where there is relatively great topographic relief, wetlands are often clearly defined and easy to map on an aerial photograph, sometimes without even conducting a site walkover. In addition, some sites contain wetlands where there is a distinct difference between upland and wetland vegetation, thus creating an abrupt, easily identifiable boundary. However, other sites contain wetlands that gradually grade into the uplands. In these situations, the three wetland indicators (vegetation, soils, and hydrology) do not form clear-cut boundaries but rather a diffuse, obscure zone of transition, thus making it difficult to determine an exact wetland boundary without doing extensive field sampling. Still other areas contain a mix of upland and wetland plants, as well as containing soils that are borderline between hydric and non-hydric, or in some instances, the soils appear to be hydric but the plants are upland.

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Methodology

Vegetation data collection focused on dominant plant species in four categories: trees (>3" diameter at breast height [DBH]), saplings and shrubs (<3.0" DBH and >3.28' tall), herbs (<3.28' tall), and woody vines (<3.28' tall). Dominance was measured by visually estimating absolute percentage of areal coverage by species. The species were rank ordered for each category by decreasing value of percent cover. The dominant species for each category are defined as those plants with the highest ranking which, when cumulatively totaled, immediately exceed 50 percent of the total dominance measure for that category, plus any additional plant species comprising 20 percent or more of the total dominance measure for the category. The indicator status for each species was determined by reference to the *National List of Plant Species That Occur in Wetlands: Northeast (Region 1)* (Reed 1995), or by reference to species habitat descriptions from various botanical sources for those species not on the national list. Scientific nomenclature for plant species follows that in *Revised Checklist of New York State Plants* (Mitchell and Tucker 1997). A sampling plot was determined to have wetland vegetation if 50 percent or more of all dominant plant species are of facultative (FAC), facultative-wetland (FACW), or obligate (OBL) indicator status, as described in the 1987 Corps Manual and 2009 Supplement.

Soils information was collected using a shovel and combination Dutch soil auger. A pit was dug to a depth of approximately 20 inches from the soil surface and a completed profile description (i.e., information concerning soil series, subgroup, drainage classification, texture, and matrix and mottle color) was used at each sampling location to determine which hydric soil indicator(s) were met (USDA NRCS 2010).

Hydrologic characteristics (inundation and soil saturation) were visually assessed to the depth of the corresponding soil sample. The 1987 Corps Manual and Supplement lists the following indicators as evidence of hydrology: 1) visual observation of inundation, 2) visual observation of soil saturation, 3) watermarks, 4) drift lines, 5) sediment deposits, 6) absence of leaf litter, 7) encrusted detritus, and 8) drainage patterns. Based on professional judgment, the following additional indicators were used as evidence of hydrology: 1) water-stained leaves and 2) oxidized root zones. Note, this list is not complete and the 1987 Corps Manual and 2009 Supplement should be referenced for a complete list of hydric indicators.

Results of the Wetland Delineation

Based on the definitions of wetlands and streams presented in the three documents described above, I delineated the northern portion of the wetland and stream that occur on the property. Where agricultural fields abut a portion of the wetland and stream complex, a very distinct and easily identifiable boundary is present. However, other portions of the wetland boundary are not as obvious because of the flat topography and a rather subtle change in all three wetland criteria. Therefore, the boundaries of the wetland were quite obvious in some areas and rather obscure in others, as described in all of the above scenarios.

Figure 1 shows the boundary of the north side of the wetland and stream as well as the locations of the data samples and photographs. The corresponding photographs are presented on pages 7 through 8 of this report.

Vegetation

The U.S. Fish and Wildlife Service (FWS) has devised a categorization scheme for plants occurring throughout the United States [Reed, P.B., Jr. 1995. *National List of Plant Species That Occur in Wetlands: Northeast (Region 1)*. U.S. Fish and Wildlife Service Biological Report 88(26.1). St. Petersburg, FL]. In this scheme, the FWS has assigned a wetland indicator status that gives the probability that a given plant species occurs in a wetland. The categorization scheme is as follows:

Obligate Wetland (OBL) - occurs almost always (>99% probability) under natural conditions in wetlands.

Facultative Wetland (FACW) - usually occurs in wetlands (67%-99% probability), but occasionally found in nonwetlands.

Facultative (FAC) - equally likely to occur in wetlands or nonwetlands (34%-66%).

Facultative Upland (FACU) - usually occurs in nonwetlands (67%-99% probability), but occasionally found in wetlands (1%-33% probability).

Obligate Upland (UPL) - almost always occurs in nonwetlands (>99% probability) under natural conditions.

The Corps utilizes this list of plant species for aid in delineating wetlands.

The following is a description of the vegetation (the wetland indicator status is given for each species) observed in the wetland noted on the north side of the study area. The western portion of the wetland is an emergent wetland dominated by reed canarygrass (*Phalaris arundinacea* - FACW) with large patches of narrow-leaved cattail (*Typha angustifolia* - OBL) along the northern and eastern edges. Other species present within this part of the wetland include spotted Joe pye-weed (*Eupatorium maculatum* - FACW), boneset (*Eupatorium perfoliatum* - FACW), blueflag (*Iris versicolor* - OBL), spearmint (*Mentha spicata* - FACW), water plantain (*Alisma subcordatum* - OBL), crested sedge (*Carex cristatella* - FACW), fox sedge (*Carex vulpinoidea* - OBL), and hop sedge (*Carex lupulina* - OBL). Eastern cottonwood (*Populus deltoides* - FACW), green ash (*Fraxinus pennsylvanica* - FACW), gray dogwood (*Cornus foemina* - FAC), and silky dogwood (*Cornus amomum* - FACW) are present along the edges of this part of the wetland and in places form a dense border.

The eastern portion of the wetland is a forested wetland dominated by silver maple (*Acer saccharinum* - FACW). There is some green ash (*Fraxinus pennsylvanica* - FACW) and red maple (*Acer rubrum* - FAC) mixed in with the silver maple in the far eastern portion of this part of the wetland. The understory is dominated by spotted jewelweed (*Impatiens capensis* - FACW) with a few other species present to a much lesser extent. These include poison ivy (*Toxicodendron radicans* - FAC), skunk cabbage (*Symplocarpus foetidus* - OBL), slender mannagrass (*Glyceria melicaria* - OBL), and blueflag (*Iris versicolor* - OBL).

The stream that flows through the wetland from the southeast to the northwest does not contain any wetland vegetation although spotted jewelweed (*Impatiens capensis* - FACW), spotted Joe pye-weed (*Eupatorium maculatum* - FACW), and a few skunk cabbage (*Symplocarpus foetidus* - OBL) occur along the edge.

Active agricultural fields occur along the north side of the wetland. Old field and scrub-shrub upland vegetation occurs between the wetland and these fields. The most common species in the old field areas include the following: Canada goldenrod (*Solidago canadensis* - FACU), white avens (*Geum canadense* - FACU), Queen Anne's-lace (*Daucus carota* - FACU), and common milkweed (*Asclepias syriaca* - FACU). The most common species in the scrub-shrub upland areas include apple (*Malus* sp. - FACU), honeysuckle (*Lonicera tatarica* - FACU), gray dogwood (*Cornus foemina* - FAC), multiflora rose (*Rosa multiflora* - FACU), and common buckthorn (*Rhamnus cathartica* - UPL).

Soils

The soils in the wetland consist of Canandaigua silt loam and Lyons silt loam. The topsoil layer in Canandaigua consists of very dark gray (10YR3/1) silt loam while the upper portion of the subsoil layer consists of light brownish gray (10YR6/2) silt loam with yellowish brown (10YR5/6) mottles. The lower portion of the subsoil layer consists of gray (10YR6/1) silt loam with light brownish gray (10YR6/2) and yellowish brown (10YR5/6) mottles. The topsoil layer in Lyons consists of very dark grayish brown (10YR3/2) silt loam while the upper portion of the subsoil layer consists of grayish brown (10YR5/2) silt loam with yellowish brown (10YR5/6) mottles. The lower portion of the subsoil layer consists of grayish brown (10YR5/2) silt loam with gray (5Y6/1) and strong brown (7.5YR5/6) mottles. The substrate in the stream consists of fine silt with some small and medium-sized rocks.

The soils in the upland are Honeoye silt loam which consist of very dark grayish brown (10YR3/2) silt loam in the upper portion of the topsoil layer. The lower portion of the topsoil layer consists of brown (10YR5/3) silt loam while the subsoil layer consists of brown (10YR4/3) silt loam.

Hydrology

At the time of the delineation, the soils in the wetland ranged from fairly dry in the eastern portion to saturated to the surface in the western portion. The emergent (western) portion of the wetland appears to have permanent wetland hydrology while the forested (eastern) portion of the wetland has seasonal hydrology which is a result of the land sloping very slightly from east to west.

At the time of the wetland delineation, the depth of water flowing in the stream ranged from 3 to 6 inches. The eastern portion of the stream is defined by banks that range from 8 inches to 24 inches tall, while banks of the stream within the wetland range from 4 to 6 inches tall.

The soils in the upland were dry at the time of the delineation and there were no indicators of wetland hydrology.

Wetland Hydrology

It appears as though the wetland hydrology comes from a number of sources, including direct precipitation, a seasonal high groundwater table, and seasonal flooding from the stream that flows through the wetland. During periods of snow melt and heavy precipitation events, the water in the portion of the stream within the wetland overtops the banks and floods the wetland area. In addition, water flows into the wetland from the surrounding upland. This water then slowly seeps into the ground as well as flows out of the wetland via the stream. Since the wetland delineation only looks at surface hydrology and subsurface hydrology to a depth of approximately 20 inches, it is unknown at this time as to whether the water within the wetland is perched (at least there was no impermeable layer within 20 inches of the surface). According to the soil survey information for Monroe and Livingston Counties, the soils within the wetland are mapped as Canandaigua, Colwood, and Toledo. All three of these soils are poorly to very poorly drained with a seasonal high water table. The descriptions of the soils do not indicate a perched water table or hardpan which would prevent the water from permeating through the soil layers. In order to know whether the proposed quarry expansion will affect the wetland hydrology, exploration of the subsurface materials should be conducted along the north side of the wetland (i.e., core samples). This will provide information on the makeup of the subsurface materials which will allow for the assessment of groundwater location and movement. In addition, in order to record and assess the groundwater changes over time, it is also suggested that at least one (1) shallow monitoring well be installed along the north side of and/or within the wetland.

Rare Species

The response letter received from the New York Natural Heritage Program (dated April 27, 2010) indicates that Limestone Woodland, an unlisted but important example of this community type, occurs to the north of the subject property. In addition, James' Sedge (*Carex jamesii*), a state-threatened plant species, occurs to the northwest of the property. According to Reschke in *Ecological Communities of New York State* (2002), describes Limestone Woodland as follows:

> "A woodland that occurs on shallow soils over limestone bedrock, and usually includes numerous rock outcrops. The tree canopy may be open or closed. There are usually several codominant trees, although one species may become dominant in any one stand. Characteristic canopy trees in some stands are primarily conifers such as northern white cedar (*Thuja occidentalis*), white pine (*Pinus strobus*), white spruce (*Picea glauca*), and balsam fir (*Abies balsamea*). In other stands the characteristic canopy trees are primarily hardwoods such as eastern hop hornbeam (*Ostrya virginiana*), sugar maple (*Acer saccharum*), shagbark hickory (*Carya ovata*), white oak (*Quercus*

alba), bur oak (*Quercus macrocarpa*), red oak (*Quercus rubra*), and basswood (*Tilia americana*). There are also stands that include mixtures of these conifers and hardwoods."

During the wetland delineation, it was noted that the Limestone Woodland habitat type does not occur within the study area.

James' Sedge occurs in rich woods, especially in calcareous soil. It is mostly a midwestern species but occasionally occurs in New York State. I have enclosed several informational pages from the New York Natural Heritage Program site describing the characteristics of James' Sedge as well as the typical habitat requirements.

During the wetland delineation, it was noted that James' sedge does not occur within the study area.

Wetland Permitting

The following is a discussion on wetland permitting issues for this project.

State Jurisdiction - It is understood that the NYSDEC does not have jurisdiction over the wetland on the property under Article 24 of the Environmental Conservation Law (ECL) although they do have jurisdiction over the streams (classified as "C" streams) that flow through the wetland under Article 15 of the ECL (please refer to Figure 2 on page 10). As a result, the NYSDEC does not regulate a 100-foot adjacent area to the wetland and therefore, in terms of wetland permitting, there is no required setback between the wetland and the edge of the proposed quarry.

Federal Jurisdiction - It is assumed that the Corps has jurisdiction over the wetland and streams since they eventually flow into a traditionally navigable water (i.e., Genesee River). Regardless of this, based on our conversations, it is understood that the quarry will not affect the wetland and streams in terms of the placement of fill material, so a permit from the Corps will not be required.

Since there will be no direct impacts to the wetland and streams by the quarry operation, authorization to proceed or a permit from the Corps will not be required. In addition, the NYSDEC does not have jurisdiction over the wetland and therefore there is no 100-foot adjacent area around the wetland. Based on this, the distance of the quarry in relation to the edge of the wetland is irrelevant in terms of wetland permitting. In summary, it is unnecessary to contact the Corps or NYSDEC regarding the expansion of the quarry operation on the subject property.

If you have any questions concerning the information in this report, please do not hesitate to contact me at 315.637.3701 or bcreuter@verizon.net.

Sincerely,

THE ENVIRONMENTAL COLLABORATIVE

Barbara C. Reuter

Barbara C. Reuter
President

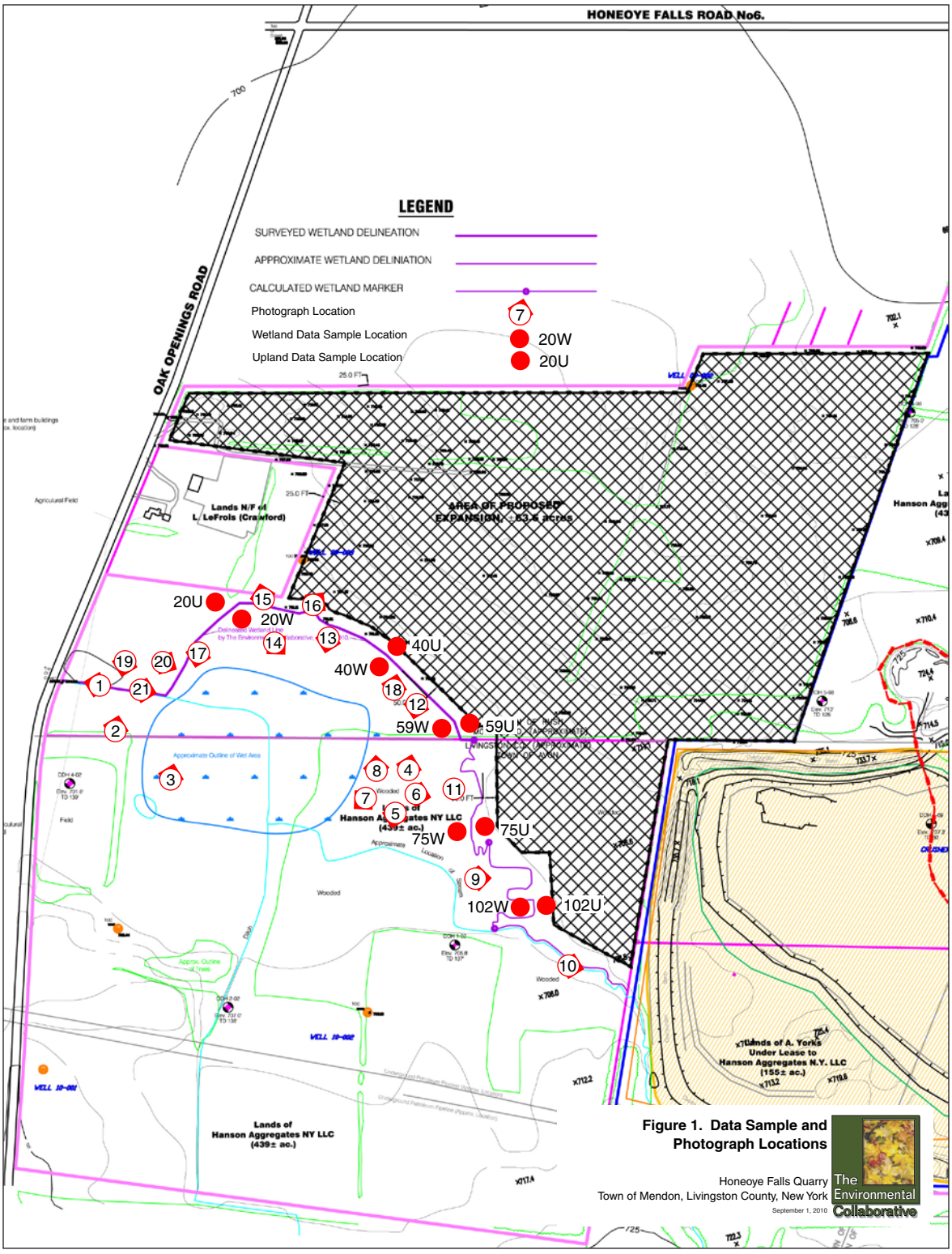

Figure 1. Data Sample and Photograph Locations

Honeoye Falls Quarry
Town of Mendon, Livingston County, New York
September 1, 2010

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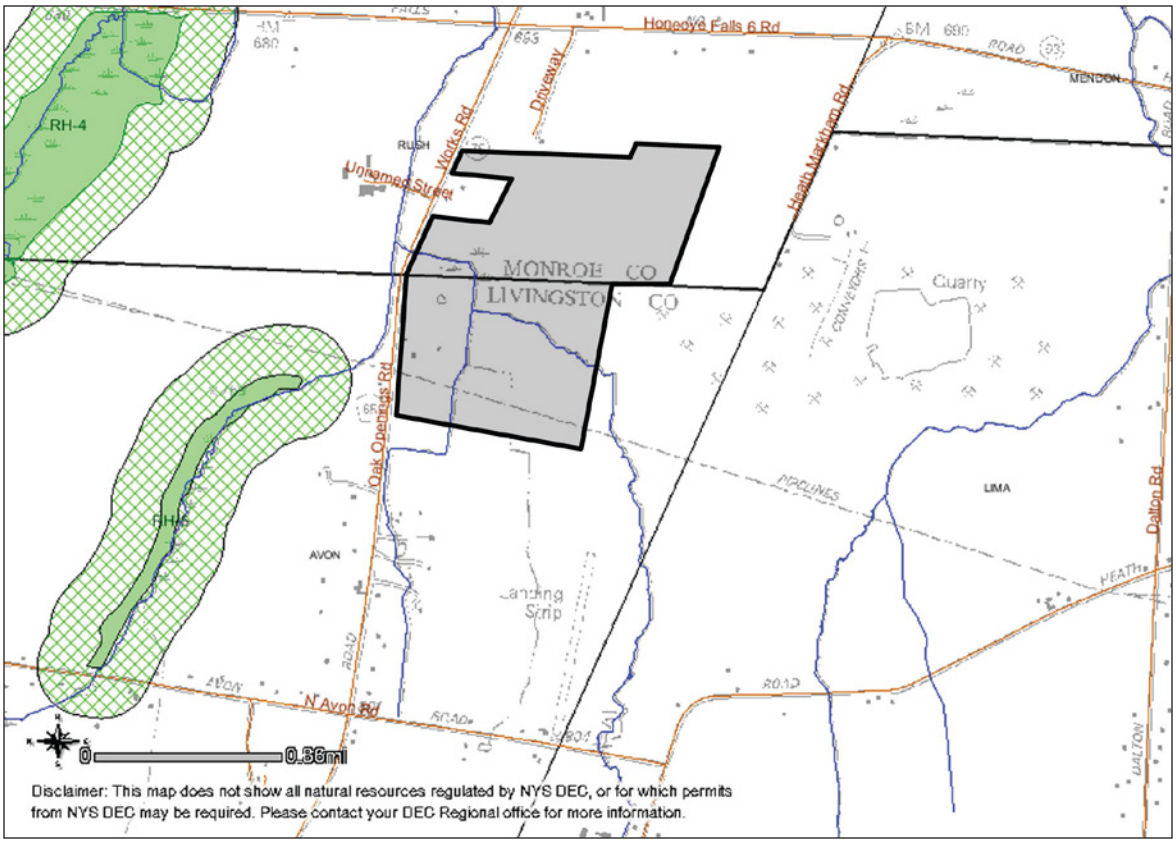

Figure 2. The proposed quarry expansion area shown on the NYSDEC Freshwater Wetlands Map.