

APPENDIX C

Ecological Report

**Mill Seat Landfill
Facility ID No. 8-2648-00014**

Monroe County, New York

**Ecological Report
for the
Proposed Soil Borrow Project**

June 2010

Draft – June 2010 Attorney work product submitted for Inter-Agency Review
and not subject to disclosure.

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Town of Riga
Monroe County, New York

Ecological Report
For the
Proposed Soil Borrow Project

June 2010

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1.0 Introduction and Project Location

Monroe County ("the County") is the owner and permittee of the Mill Seat Landfill. The currently permitted landfill and associated operations shall be referred to hereafter as the "Mill Seat Facility" or the "facility" and the land on which the currently permitted Mill Seat Landfill is located will be referred to as the "landfill site" or the "site". The Mill Seat Landfill is operated by Waste Management of New York, LLC (WMNY), under a lease agreement with Monroe County. The landfill's Permit I.D. number is 8-2648-00014.

The County is seeking a 6 NYCRR Part 360, Solid Waste Management Permit modification from New York State Department of Environmental Conservation (NYSDEC) to construct and operate a soil borrow area, hereafter referred to as the "soil borrow project" or the "project". The soil borrow project consists of two areas, approximately 20 acres and 42 acres in size, which will provide on-site soils for operation of the permitted landfill site. Currently, soils for landfill construction and operation are obtained from existing borrow areas at the Mill Seat Facility, but there will not be adequate soil volumes from these area to operate the presently permitted landfill site.

The soil borrow project is detailed in the associated Borrow Area Use Plan (BAUP) (McMahon & Mann, 2010). The proposed East and West borrow areas are located on either side of NYSDEC regulated freshwater wetland RG-6. NYSDEC regulated freshwater wetland RG-5 is located to the west of the soil borrow sites and wetland RG-7 is located to the east, across Brew Road. Wetlands RG-5, RG-6, and

RG-7 also meet the criteria for federal jurisdiction by the U.S. Army Corps of Engineers (USACE).

The east and west borrow areas are located south of the active permitted landfill on property owned by the County and WMNY. Construction of the east borrow area will require closure of a portion of Brew Road south of the landfill site. A section of the west borrow area is currently being used as a permitted stockpile area and has already been stripped of vegetation. The location of the Mill Seat Facility is depicted on Figure 1.

2.0 Geography

Monroe County is located in the northern tier of the western section of New York State, bordering Lake Ontario to the south. Monroe County has a total area of approximately 659 square miles. The Town of Riga is located in the southwest corner of Monroe County. The east borrow area has gently sloping topography that slopes from west to east. The remaining land within the west borrow area drains partially to the west and partially to the east. Figure 2 depicts the topographic contours within the project area and adjacent lands.

3.0 Physiographic Location

The project area is located within the Interior Plains physiographic region of the United States. Within this section, the project sits in the Central Lowland Province, Eastern Lake Region. The Interior Plains represent a large physiographic division that includes eight physiographic provinces stretching from the Canadian Shield, south, to the United States' international border with Mexico and from North and South Dakota, east, to Central New York State. The Interior Plains often are recognized by the presence of compressed layers of sedimentary rock formed by sediments left by shallow inland seas that once covered the region.

4.0 Soils

The project area is wholly mapped on soils that were formed in glacial till. Table 1 illustrates the soil type composition and distribution of the two soil borrow areas. This soils information was gathered from the Natural Resources Conservation Service (NRCS) web soil survey (2009).

Soil Symbol	Soil Series and Phase	West Borrow Area (acres and %)	East Borrow Area (acres and %)
CeB	Cayuga silt loam, 2-6% slopes	---	4.06 (9.76%)
ChA	Churchville silt loam, 0-2% slopes	---	4.47 (10.7%)
HnB	Honeoye silt loam, 3-8% slopes	---	11.74 (28.2%)
HnC	Honeoye silt loam, 8-15% slopes	---	0.60 (1.4%)
LnA	Lima silt loam, 0-3% slopes	4.37 (21.7%)	7.46 (17.9%)
LnB	Lima silt loam, 3-8% slopes	---	6.56 (15.8%)
OnB	Ontario loam, 3-8% slopes	8.73 (43.4%)	6.71 (16.1%)
OnC	Ontario loam, 8-15% slopes	2.38 (11.8%)	---
PaB	Palmyra gravelly fine sandy loam, 3-8% slopes	4.53 (22.5%)	---

None of the soils mapped within the soil borrow area limits are designated as hydric soils and only ChA (Churchville silt loam) is recognized as having the potential for hydric inclusions. Figure 3 shows soils mapped within the soil borrow area limits and surrounding areas.

5.0 Land Use

The main land uses surrounding the Mill Seat Facility are associated with various agricultural practices, especially croplands, hayfields, and dairy farms. Many of the fields located south of the Facility are actively farmed by adjacent property owners under lease agreements with WMNY. Residential properties are also located south and east of the Mill Seat Facility, particularly along O'Brien Road and Bovee Road. No active residential properties exist within or immediately adjacent to the project area. The active portion of the Landfill site is mostly located north of the project area; however, some permitted soil stockpiling has occurred within the west borrow area footprint.

6.0 Surface Water Resources

The project is located within the Lower Genesee River Drainage Basin and, more specifically, the Black Creek Watershed. In the general area, water flows from west to east. The delineated wetlands, located adjacent to the project area, drain toward the south, eventually flowing into Hotel Creek and Tributary b of Hotel Creek. Hotel Creek begins in the Town of Bergen in Genesee County. Hotel Creek flows east/northeast and eventually empties into Black Creek, a tributary of the Genesee River. Tributary b is associated with the New York State Department of Environmental Conservation (NYSDEC) mapped wetland RG-7.

Hotel Creek is also recognized by the NYSDEC as a critical environmental area (CEA). This water resource was designated as such because it is known to provide quality trout habitat and may be serve as spawning grounds for trout species. Hotel Creek was designated by the Town of Riga as a CEA on March 17, 1990. This CEA includes Hotel Creek from the point it enters Monroe County to its confluence with Black Creek.

7.0 Vegetative Cover Types

Detailed vegetative cover type mapping was compiled based on site observations and notes from multiple visits to the project area and surrounding lands. The current land uses and cover types located within the project area footprints were reviewed and quantified. The cover type categories that were used to map the project areas and their surrounding features include delineated wetland, active agricultural fields, deciduous forest, permitted disturbed areas (landfill operations), meadow (abandoned agricultural fields), paved roadway, and shrubland. Figure 4 depicts the extent of these mapped cover types. Further details about each category are provided below.

7.1 Delineated Wetland

Wetlands at the facility were delineated by Barton & Loguidice, P.C. (B&L) representatives on November 10-14, 2008 and June 8, 2009. These boundaries were reviewed and verified by NYSDEC and U.S. Army Corps of Engineers personnel in the field. In most cases, the delineated wetlands are associated with previously mapped NYSDEC freshwater wetlands regulated under Article 24 of the Environmental Conservation Law. The wetlands were mapped further to denote their specific vegetative cover types: forested, scrub-shrub, or emergent.

- *Forested* – forested wetlands are dominated by woody vegetation taller than 20-feet, where soil is at least periodically saturated or inundated. Forested wetlands within the field delineated area commonly included deciduous trees with an understory of hydrophytic vegetation. These wetlands were often observed bordering cultivated agricultural fields and other disturbed areas that are part of the operating landfill site.

- *Scrub-shrub* – This wetland cover type is primarily found in areas that were formerly open or otherwise cleared, commonly for agricultural purposes. Scrub-shrub wetlands are often found in areas of shallow standing water. Woody vegetation that is less than 20-feet in height commonly classifies these wetlands. Within the project area, scrub-shrub wetlands were most commonly observed bordering Hotel Creek in the southern portion of the site.

- *Emergent* – Erect, rooted, herbaceous hydrophytic plants characterize emergent wetlands. This vegetation can be observed throughout the majority of the growing season. These wetlands typically have standing water above the soil surface for a portion of the year and often include fringe communities along open water. On site, emergent wetlands were often observed in connection with forested and scrub-shrub cover types. Emergent wetlands were predominantly delineated along Hotel Creek and noted as localized pockets within larger forested area.

7.2 Active Agricultural Fields

Agriculture is the dominant land use category observed within the general project area and throughout the Town of Riga. The fields mapped as part of the cover type mapping for this project are predominantly used to grow corn. Multiple entry points are scattered throughout the area to allow for farm equipment access.

7.3 Deciduous Forest

Areas denoted as deciduous forest on the cover type mapping are locations where agricultural activities have been long removed and the vegetation has reached the later stages of the successional process or are areas where agricultural activities were not conducted due to their location adjacent to wetlands and at lower elevations than the surrounding fields. Dominant species observed in these areas include white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), quaking aspen (*Populus tremula*), and eastern cottonwood (*Populus deltoides*).

7.4 Disturbed Areas

The disturbed areas depicted on the cover type mapping are associated with ongoing, permitted landfill operations and activities. Within the west borrow area, soil is being stockpiled for future use at the landfill site. The disturbed area shown adjacent to the east borrow area represents an existing stormwater detention pond and smaller soil stockpile area. An extension of the disturbed area cover type is paved roadway. This category was separated from the larger designation due to the runoff and infiltration differences between paved areas and open soils. A portion of Brew Road and the western extent of O'Brien Road are the only paved roadways included within the limits of this cover type mapping effort.

7.5 Meadow

Over time, abandoned agricultural fields revert back to a more natural cover type, through the stages of succession. In the short term, upon abandonment, these fields become upland herbaceous meadows. Dominant plant species associated with the meadow cover type on-site include: purple clover (*Trifolium purpureum*), timothy (*Phleum pratense*), alfalfa (*Medicago sativa*), orchard grass (*Dactylis glomerata*), hawkweed (*Hieracium caespitosum*), and common milkweed (*Asclepias syriaca*).

7.6 Shrubland

Aside from the cultivated agricultural fields within and surrounding the project area, shrubland is the most dominant vegetative cover type observed. Shrubland areas were observed bordering the agricultural fields and act as vegetative buffers along the delineated wetlands to the west and south of the project area. These linear shrubland borders are used by wildlife as travel corridors and used by songbirds as nesting habitat. Limited areas of shrubland are included in the soil borrow project area footprints, so the majority of these shrub buffer areas and travel corridors will remain intact. The dominant species of shrubs observed within this cover type include: tartarian honeysuckle (*Lonicera tatarica*), gray dogwood (*Cornus foemina*), silky dogwood (*Cornus amomum*), and willow (*Salix* spp.).

7.7 Acreages

The acreage of all cover types that would be disturbed by soil excavation in the east and west borrow areas was calculated in order to more appropriately analyze potential habitat and ecological impacts.

These calculated acreages are included in Table 2 and are summarized separately for the east and west borrow areas.

Cover Type Designation	West Borrow Area (acres and %)	East Borrow Area (acres and %)
Delineated Wetland	---	0.76 (1.8%)
Active Agricultural Fields	---	21.49 (51.7%)
Deciduous Forest	---	---
Disturbed Areas (associated with landfill operations)	12.77 (63.5%)	0.57 (1.4%)
Paved Roadway	---	0.82 (2.0%)
Meadow (abandoned agricultural fields)	6.26 (31.1%)	12.62 (30.3%)
Shrubland	0.98 (4.9%)	5.34 (12.8%)

As shown in Table 2, the majority of impacts associated with excavation within the east and west borrow areas will impact agricultural fields, meadow, and areas that have already been disturbed due to the stockpiling of soils. Though meadows offer some habitat qualities to certain species, these qualities are limited and ample amounts of similar habitats are available adjacent to the project area.

8.0 Invasive Species

Four species of common invasive plants were observed within the mapped area, mainly outside of the project area footprints. Though an inclusive invasive species site assessment was not conducted in order to indentify all locations of these species, the following species were noted during visits to the site: reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), Japanese knotweed (*Fallopia japonica*), and black swallow-wort (*Vincetoxicum nigrum*). Reed canary grass and common reed are found in multiple locations throughout the site, commonly in dense clusters surrounded by sparse groupings of additional plants. Japanese knotweed and black swallow-wort were only observed, collectively, in a handful of locations.

9.0 Flora and Fauna

The U.S. Fish and Wildlife Service reports that populations of bog turtles (*Glyptemys muhlenbergii*) are known to occur within Monroe County, specifically in the Townships of Sweden and Riga. Though suitable bog turtle habitat may exist in more distant portions of the wetlands that surround the facility, no habitat was observed along any of the delineated wetland boundaries. No other records of federally protected species were reported and none were noted during visits to the facility.

The NYSDEC lists a 1964 record of the endangered plant log fern (*Dryopteris celsa*) within the wetland system to the east of the project areas and Brew Road. A thorough investigation to determine the presence or absence of this species north of O'Brien Road was not completed; however, no observations of log fern were made within the southern portion of this wetland system, adjacent to the proposed east borrow area limits and south of O'Brien Road. No additional species of state protected wildlife or plants were observed within the project area.

Wildlife species observed during site visits are consistent with the designations and quantities of cover types and vegetative diversity found on-site and are consistent with species commonly observed within western New York State and the Mid-Atlantic Region of the U.S. During time spent on-site, direct wildlife observations or observations of wildlife signs were recorded. Species utilizing the project area include: American goldfinch (*Spinus tristis*), American crow (*Corvus brachyrhynchos*), American tree sparrow (*Spizella arborea*), European starling (*Sturnus vulgaris*), song sparrow (*Melospiza melodia*), American robin (*Turdus migratorius*), downy woodpecker (*Picoides pubescens*), wood duck (*Aix sponsa*), killdeer (*Charadrius vociferous*), red-eyed vireo (*Vireo olivaceus*), Canada goose (*Branta canadensis*), turkey vulture (*Cathartes aura*), gray catbird (*Dumetella carolinensis*), red-tailed hawk (*Buteo*

jamaicensis), red-winged blackbird (*Agelaius phoeniceus*), mallard duck (*Anas platyrhynchos*), white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), and red squirrel (*Sciurus vulgaris*). This list is not an exhaustive list of all wildlife species that do, or could, utilize the areas analyzed; the purpose of this list is to identify a handful of the types of wildlife and specific species that are known to inhabit the area and surrounding lands.

10.0 Summary

Based on the site observations collected during fall 2008 to spring 2010, it is anticipated that no protected species populations or critical habitat areas will be impacted as a result of the project. Wildlife species that are displaced as a result of the project will be able to find ample suitable habitat elsewhere, adjacent to the project areas. Vegetation will be removed and soils will be disturbed within the project area footprints, but the cover types mapped in these areas are not rare or protected and are found in other areas adjacent to the project. Hotel Creek and Tributary b will not be impacted by the project since they are located outside of the project area footprints and immediately surrounding lands. One wetland location will be impacted due to its location within the east borrow area footprint. In contrast to the larger and more complex wetland systems surrounding the area, this wetland is of poor quality and is limited in the amount of habitat it can provide. This wetland was determined to be isolated in the field; this initial determination is under current review by the U.S. Army Corps of Engineers.

Figures

Figure 1
Site Location Map



1 inch = 2,000 feet

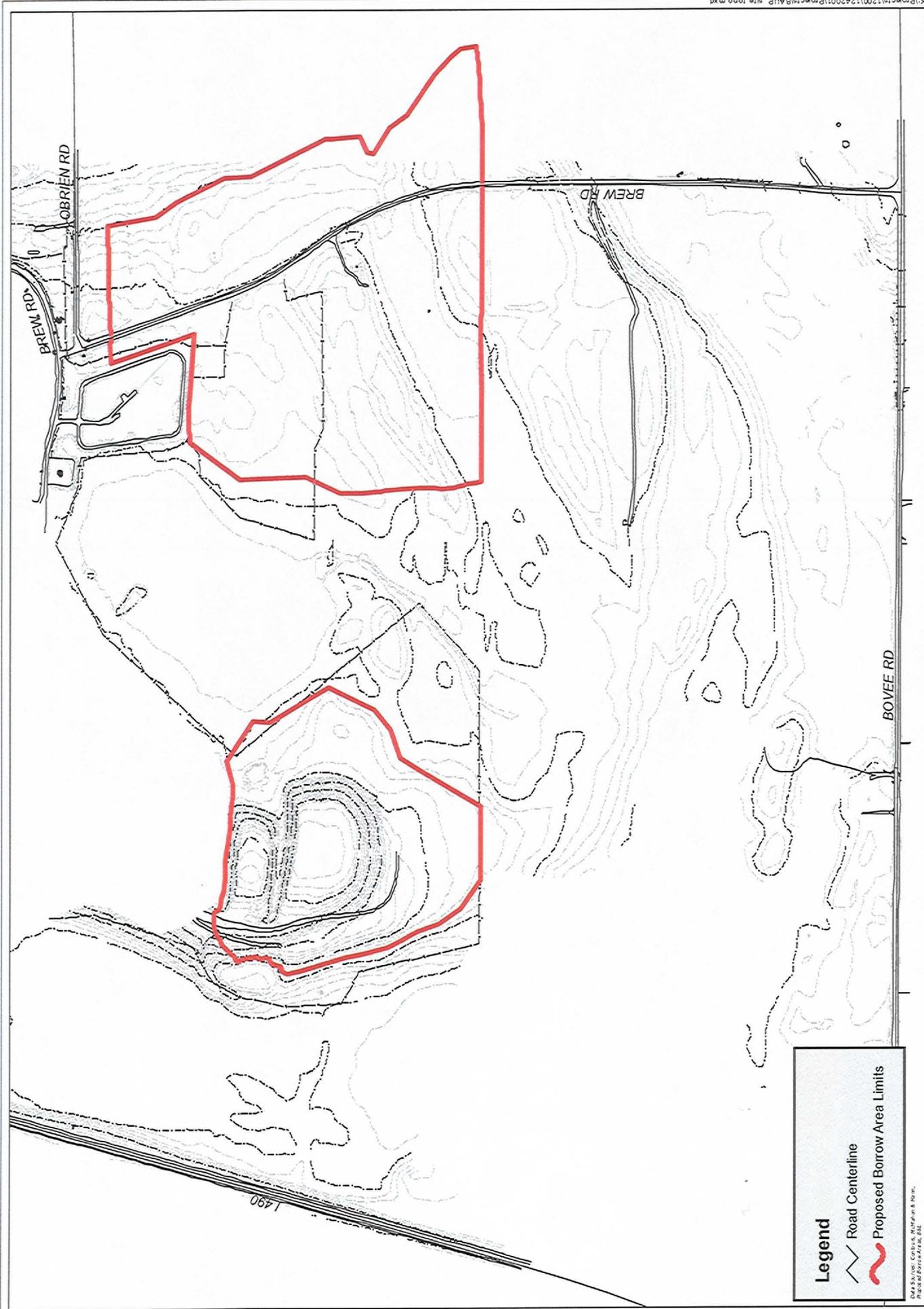
Legend

- Road Centerline
- Proposed Soil Borrow Area
- Municipal Boundary

DAVIDSON & DENTLINE MAPERS
 1000 STATE ST. SUITE 200
 WARREN COUNTY, NY 12983



Figure 2
Site Topography



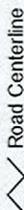
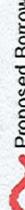
K:\Project\12001\242001\Project\B\AUP_site_topo.mxd

Figure
2
Project No.
1242001
New York
06/09/10
Hempstead County

Mill Seat Landfill - Soil Borrow Project
Site Topography

1 inch = 500 feet

Legend

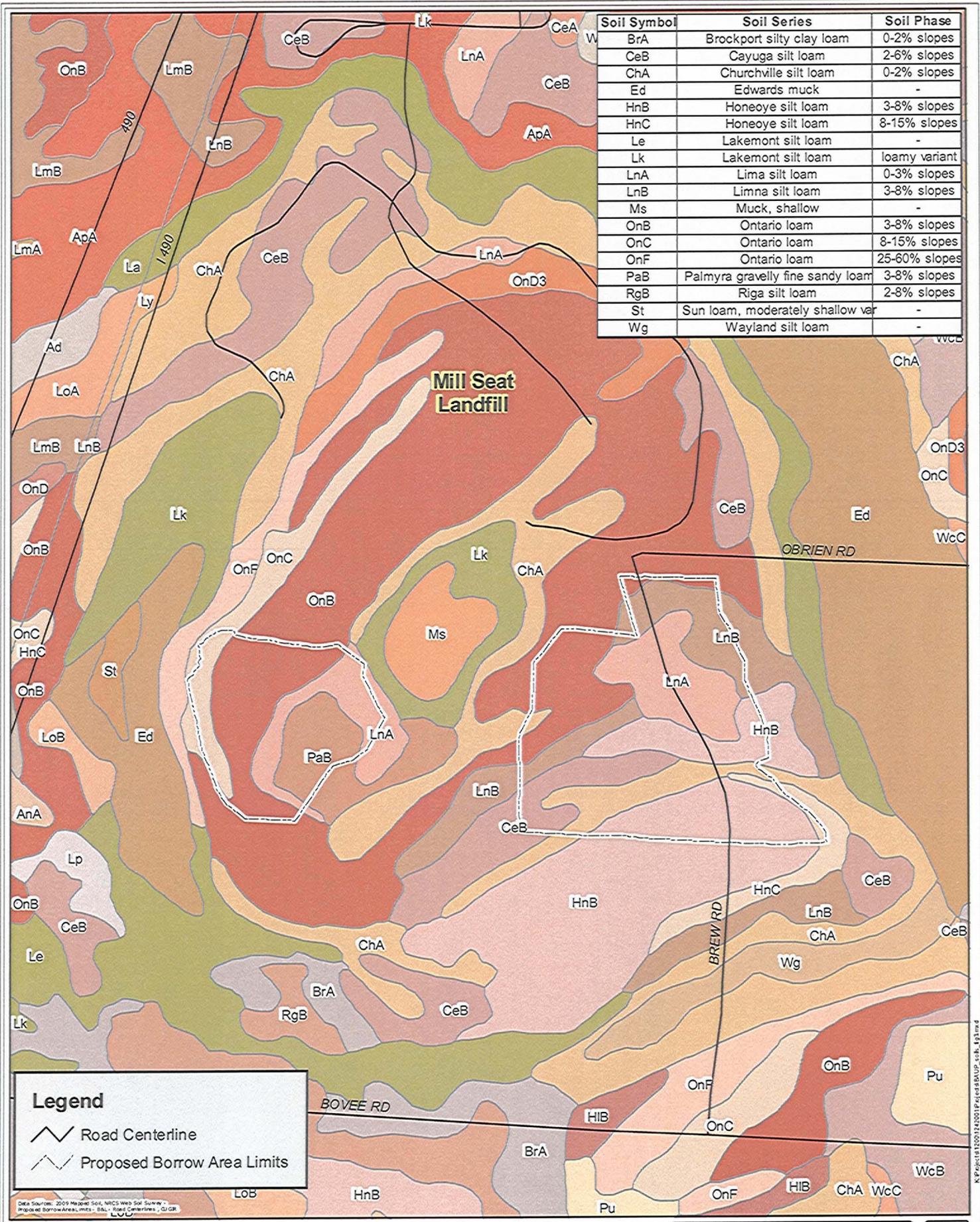
-  Road Centerline
-  Proposed Borrow Area Limits

Bartholomew & Associates, P.C.
Professional Engineers, Inc.



STATE OF NEW YORK
JULY 15, 2010
1242001

Figure 3
NRCS Mapped Soils



Soil Symbol	Soil Series	Soil Phase
BrA	Brockport silty clay loam	0-2% slopes
CeB	Cayuga silt loam	2-6% slopes
ChA	Churchville silt loam	0-2% slopes
Ed	Edwards muck	-
HnB	Honeoye silt loam	3-8% slopes
HnC	Honeoye silt loam	8-15% slopes
Le	Lakemont silt loam	-
Lk	Lakemont silt loam	loamy variant
LnA	Lima silt loam	0-3% slopes
LnB	Limna silt loam	3-8% slopes
Ms	Muck, shallow	-
OnB	Ontario loam	3-8% slopes
OnC	Ontario loam	8-15% slopes
OnF	Ontario loam	25-60% slopes
PaB	Palmyra gravelly fine sandy loam	3-8% slopes
RgB	Riga silt loam	2-8% slopes
St	Sun loam, moderately shallow var	-
Wg	Wayland silt loam	-

Legend

- Road Centerline
- Proposed Borrow Area Limits

Data Source: 2009 Mapped Soil, NRCS Web Soil Survey - Proposed Borrow Area Limits - BAL - Road Centerlines - QIGB



μ
1 inch = 700 feet

Mill Seat Landfill - Soil Borrow Project

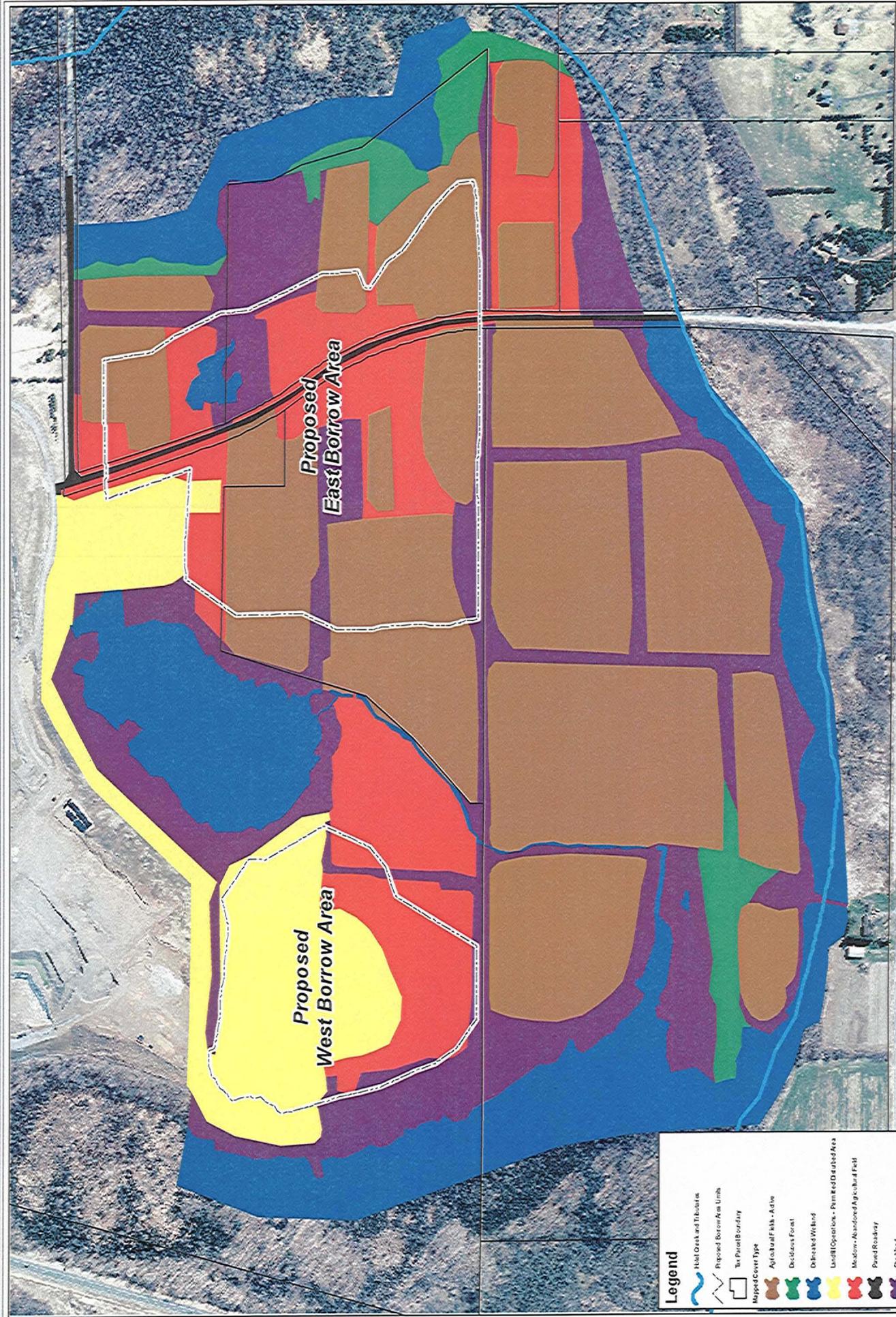
NRCS Mapped Soils

Monroe County 07/23/09 New York

Figure
3
Project No.
1242.001

K:\Project\1242001\1242001\Project\BAPUS_csk_433.mxd

Figure 4
Cover Type Mapping



Proposed
East Borrow Area

Proposed
West Borrow Area

Legend

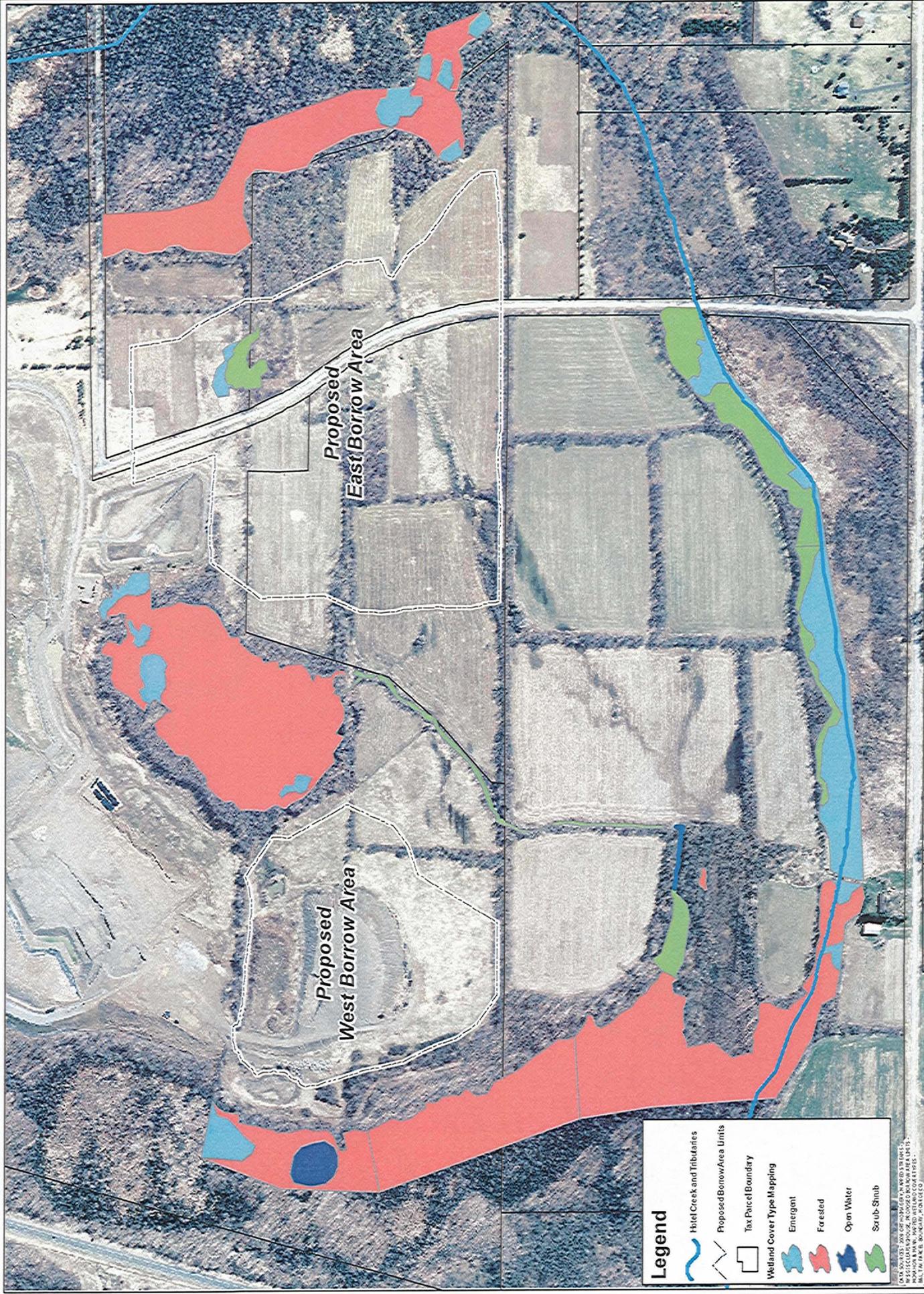
- Mill Creek and Tributaries
- Proposed Borrow Area Units
- Tax Parcel Boundary
- Mapped Cover Type
- Agricultural Field - Active
- Deciduous Forest
- Disrupted Wetland
- Landfill Operations - Permited/Outsourced Area
- Mottled/Abandoned Agricultural Field
- Paved Roadway
- Subtiled

DATE: 05/05/2010 09:05:00 AM
 PROJECT: MILL SEAT LANDFILL - SOIL BORROW PROJECT
 DRAWN BY: J. B. BROWN
 CHECKED BY: J. B. BROWN
 APPROVED BY: J. B. BROWN



1 inch = 500 feet

Figure 5
Wetland Cover Type Mapping



1 inch = 500 feet

Legend

- Hulet Creek and Tributaries
- Proposed Borrow Area Limits
- Tax Parcel Boundary

Wetland Cover Type Mapping

- Emergent
- Forested
- Open Water
- Scrub-Shrub

ALL DATA IS BASED ON THE MOST RECENT AVAILABLE DATA.
 THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE A WARRANTY.
 MONROE COUNTY ENGINEERING CONSULTANTS, INC.

