BOG TURTLE HABITAT (PHASE 1) SURVEY REPORT

CROSS-COUNTY SANITARY/KESSMAN LANDFILL
286 CORNWALL HILL ROAD
PATTERSON, NEW YORK 12563
PUTNAM COUNTY
NYSDEC Site No. 340011
Work Assignment No. D009812-07

Submitted to:
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233

Prepared by:

JULY 2020

TABLE OF CONTENTS

ATTACHMENTS

ACRONYMS

CWA	Clean Water Act
ECL	Environmental Conservation Law
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information System
GPS	Global positioning system
NHD	National Hydrography dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NYSDEC	New York State Department of Environmental Conservation
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PSS	Palustrine Scrub-Shrub Wetland
PUB	Palustrine Unconsolidated Bottom Wetland
RTE	Rare, threatened or endangered species
TRC	TRC Engineers, Inc.
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

This report summarizes the results of a Phase 1 Bog Turtle Habitat Survey conducted for the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation, at the Cross-County Sanitary / Kessman Landfill (Site). The purpose of the Phase 1 Bog Turtle Habitat survey was to evaluate the existing Site conditions and determine whether suitable Bog Turtle habitat exists within the vicinity of the proposed project. The Site visit portion of the habitat survey was conducted by TRC Engineers, Inc. (TRC) on June 1, 2020. This report describes the methods used during the survey, and summarizes the findings of the Site-specific assessment.

2.0 PROJECT AND SITE INFORMATION

2.1 Survey Request

This Phase 1 habitat survey for the Site was conducted on behalf of the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation. The Site is located at 286 Cornwall Hill Road in the Town of Patterson, in Putnam County, New York (Attachment A – Figure 1).

Name:	New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation
Address:	625 Broadway, 12th Floor
City/State/Zip:	Albany, New York 12233
Telephone:	(518) 402-9764
Project Name:	Cross-County Sanitary/Kessman Landfill Site (No. 340011)

2.2 Project/Property Location

Address:	286 Cornwall Hill Road
City/State/Zip:	Patterson, New York 12563
Township/Municipality:	Town of Patterson
County:	Putnam
Watershed (Minor):	Lower Hudson Basin, 02301002-East Branch Croton
Watershed (Major):	Lower Hudson River

The Site Location Map is presented in **Figure 1 (Attachment A)**. An illustration of the Site Layout and Survey Area is presented in **Figure 2 (Attachment A)**.

2.3 Survey Area/Property Size and Extent

The sampling area for the overall project includes 1.3-acres of wetland located immediately east of the former landfill, which is currently capped and maintained as a grassland community (Figure 1). The landfill is located between Tax Map Parcel Nos. 13.-3-14 and 13.-3-16 (Putnam County eParcel Viewer). This sediment investigation/remediation area i.e. "Sampling Area" is being evaluated for remediation options and represents the limit of disturbance for potential work at this site. To determine the area for phase 1 bog turtle habitat survey, the sampling area was buffered by 300 feet. The phase 1 bog turtle habitat Survey Area included all wetlands within in the property located inside the 300' buffer. The Survey Area size is approximately 4.35 acres. The Survey Area is bounded to the west and south by the former landfill, to the east by an active railroad, and to the north by a large, connected wetland that extends northward into a tributary to Muddy Brook. The Sampling Area and Survey area are depicted on **Figure** 2.

2.4 Current Land Use and Setting

Land use within the Project Site consists primarily of an altered wetland previously used for waste disposal, with a railroad bordering the eastern side of the property. The Survey Area within the site consists of a rebuilt wetland, within NYSDEC-mapped wetland DP-22. This wetland was

rebuild and restored as part of an extensive remediation effort for the landfill in the 1980's and early 1990's. The Town of Patterson Zoning Map indicates that the Site and Survey Area are located within an area designated as R4 – Residential. In addition, based on a review of the Putnam County eParcel Viewer, the current property classes for the Site (and Survey Area) are designated as "852 – Landfill", and "105 – Vacant Farmland".

The Site is bordered to the west by Cornwall Hill Road; to the east by the NYSDEC wetland and Metro North Railroad; to the north by the NYSDEC wetland; and to the south by the Patterson Recycling Center. **Figure 2** represents a detailed aerial view of the Project Site and includes the results of wetland delineations performed on August 1 and December 16, 2019 (reported under separate cover).

2.5 Project Description

TRC has been retained by the NYSDEC to prepare a Remedial System Optimization (RSO) Report to evaluate remediation options that are being considered for implementation at the Site. The Site has been under investigation and/or remediation since it was repossessed in 1974, with the overall goals of remediating contaminated soil, surface water, and sediment at the Site. Initial site assessments and remedial investigations were completed in the 1980s, leading to the completion of a Feasibility Study (FS) Report in December of 1992. A Record of Decision (ROD) was issued in November 1994. Subsequent to the ROD, the Remedial Design was prepared, and the remedial action was completed in September 1996.

Post-construction, Site-related contamination was first detected in wetland sediment in 2003. This finding has been the focus of ongoing investigations, culminating in the investigation and delineation activities performed by TRC between 2016 and 2019. These investigations included sediment sampling, groundwater sampling, geotechnical investigation, and geophysical investigation. The primary goal of the investigations conducted to date has been to assess the nature and extent of contamination (polychlorinated biphenyls [PCBs]) in the wetland sediment adjacent to the landfill.

As part of the project permitting and approvals process, wetland, waterbody and wildlife factors are evaluated. Bog turtles have been recorded in the Great Swamp, an especially large and diverse wetland system, within 0.6 miles of the Project Area. A Phase 1 bog Turtle survey was conducted to determine the quality of habitat on-Site for this species. Phase 1 habitat survey protocols were based upon the US Fish and Wildlife Service Guidelines for Bog Turtle Surveys for the Northern Population Range (Revised April 29, 2020 https://www.fws.gov/northeast/nyfo/es/Surveyor%20Lists/REVISED%20Phase%201%20and%202%20Protocols_04.29.20_FINAL.pdf). As required, the Phase 1 Bog Turtle Survey Reporting Data Sheet has been completed and is included as **Attachment B.** A log of photographs is included as **Attachment C**. Detailed discussion of the survey results is presented in **Section 4**.

2.6 Permit Considerations

Several permits are assumed necessary to support the proposed project. A list of applicable permits and regulatory jurisdictions follow:

- Section 404 Clean Water Act;
- Section 401 Clean Water Act (NYSDEC) Water Quality Certification;
- ECL Article 24 (NYSDEC) Freshwater Wetlands Act;
- Section 7 US Fish and Wildlife Service Threatened and Endangered Species Review and Consultation;
- State Pollutant Discharge Elimination System (SPDES) Permit for Construction and Dewatering Activities;
- NYSDEC Threatened and Endangered Species Inventory Review;
- NYSDEC Threatened and Endangered Species Incidental Take Permit pursuant to ECL Section 11-0535 (Part 182 of the regulations at 6 NYCRR);
- Section 106 of the National Historic Preservation Act;
- Section 14.09 of the New York State Historic Preservation Act of 1980: Cultural and Historic Resources Review and Consultation; and
- Local permitting through Patterson Planning Department, Building Department, and/or, Zoning Department, as well as the Putnam County Soil and Water Conservation District.

3.0 WETLAND INFORMATION

Prior to field investigations, wetland scientists conducted a desktop analysis to identify potential wetlands, streams, and vernal pools within the Survey Area, utilizing the following publicly available data:

- USGS topographic mapping;
- USGS National Hydrography Dataset (NHD);
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- Natural Resources Conservation Service (NRCS) medium-intensity soil survey mapping;
- FEMA FIRMs;
- NYSDEC Environmental Resource Mapper
- Recent and historic aerial photography.

3.1 Wetland Delineations

Wetlands are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). The CWA defines wetlands as:

> *"…areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances (do) support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."*

Wetland delineations were conducted according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, v2* (USACE 2012). This supplement follows criteria established in the USACE Wetlands Delineation Manual (Environmental Laboratory, Technical Report T-87-1, 1987), but is region specific, giving the wetland delineator a better tool to apply to regional vegetation communities, indicators of hydrology, and indicators of hydric soils when conducting a wetland boundary determination. Wetlands on Site are also regulated by the NYSDEC under Article 24 of the Environmental Conservation Law. As such, the delineation took into account NYSDEC delineation survey protocol, per the July 1995 NYSDEC Freshwater Wetlands Delineation Manual. In this instance, the boundary was congruent between the USACE and NYSDEC approaches to demarcation.

The wetland delineation for the Survey Area was completed on August 1, 2019 and December 16, 2019 by:

Name: Weston Hillegas
Affiliation: TRC Engineers, Inc.
Address: 1200 Wall Street West
City/State/Zip: Lyndhurst New Jersey 07071
Telephone: (201) 933-5541
Email: WHillegas@trccompanies.com

A wetland report for this project was submitted to the New York State Department of Environmental Conservation on January 20, 2020. Wetland permitting is underway for the proposed project.

TABLE 1: Wetland Size and Location

Wetland ID	Wetland (Actual Size)	Designated Survey Area	Latitude / Longitude	Is the entire wetland On-Site?
W-WH-1	5,513.3 acres*	4.35 acres	41.4977762, -73.6072566	No
• The overall wetland size is estimate based on NYSDEC Environmental Resource Mapper for Wetland ID DP-22 (NYSDEC 2020)				

4.0 PHASE 1 SURVEY RESULTS

The Phase 1 Bog Turtle Survey was conducted on June 1, 2020 by:

Name: Duane Choquette
Affiliation: TRC Engineers, Inc.
Address: 6 Ashley Drive
City/State/Zip: Scarborough, ME 04074
Telephone: (518) 222-1383
Email: Dchoquette@trccompanies.com

In general, contaminant investigation and remediation efforts have been/will be limited to the 1.3-acre Sampling Area designated on **Figure 2**. Project support activities may extend beyond this area (i.e., waste management, water treatment, etc) but will not impact any additional wetland area. This Phase 1 survey was conducted on the Survey Area and was comprised of all wetlands on the property that were within 300 feet of the Sampling Area to identify and quantify potential bog turtle habitat within this area. This buffer was based on the protocols set forth in the Guidelines for Bog Turtle surveys for the Northern Population Range Phase 1 and 2 *surveys revised April 29, 2020*. This resulted in a bog turtle habitat Survey Area of approximately 4.35acres. Additional wetland area beyond this designated limit was not surveyed.

A summary of the Phase 1 survey results is included in **Table 2**. Detailed information about the wetland follows the table. Completed bog turtle Phase 1 survey forms for this wetland are in Attachment B. Photographs are in Attachment C.

Table 2: Summary of Phase 1 Bog Turtle Survey Results

Wetland ID	Wetland Size	Wetland Type and Amount	Extent of "Mucky" Soils	Survey Effort (Person Hours)	Bog Turtle Habitat
W-WH-1	4.35 acres*	PEM 50% PSS 30% PFO 20% PUB 10%	PEM 60% PSS 30% PFO 10% PUB 100%	6	No

*The area surveyed within the property bounds was 4.35 acres. The overall wetland complex is over 5,513.3acres.

4.1 Wetlands

Wetland W-WH-1 is primarily a PEM wetland located to the north and east of the Site (**Attachment A – Figure 2**). Wetland W-WH-1 is a small portion of the Great Swamp, a 19.8-mile long, 4,202-acre sprawling wetland complex of state significance and an important stopover for migrating waterfowl.

In summary, the portion of the wetland identified in the 300' buffered Survey Area measures approximately 4.35 acres, with the wetland continuing off-Site to the south and north. Hydrology

originates from outside the study area as well as along the toe of slope of the landfill. Indicators of wetland hydrology include surface water (A1), high water table (A2), saturation (A3), inundation visible on aerial imagery (B7), drainage patterns (B10), saturation visible on aerial imagery (C9), geomorphic position (D2), FAC-neutral test (D5). Dominant vegetation includes common reed (*Phragmites australis*). Non-dominant vegetation also includes lakeshore rush (*Schoenoplectus lacustris*), purple loosestrife (*Lythrum salicaria*), narrowleaf cattail (*Typha angustifolia*) and northern water plantain (*Alisma triviale*). Soils have an organic matter, silt loam and sandy loam texture. Hydric soil indicators include sandy gleyed matrix (S4). Soils mapped by the NRCS in the vicinity of W-WH-1 consisted of Fluvaquents-Udifluvents complex, frequently flooded (Ff).

4.2 Bog Turtle Habitat Evaluation - Vegetation

Wetland cover types were assigned to each segment of the surveyed wetland according to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). The Cowardin classification system is a hierarchical system based primarily on the general classification of wetlands into marine, estuarine, palustrine (freshwater wetland), riverine (stream), or lacustrine (lake) systems, and the dominant vegetation layer. Only palustrine classification types were identified within the Survey Area. Using this hierarchical wetland classification system, four primary cover types were identified for vegetated wetland in the Survey Area: palustrine forested (PFO), palustrine scrub shrub (PSS), palustrine emergent (PEM), and palustrine unconsolidated bottom (PUB) wetland.

4.2.1 *PFO Wetland Vegetation*

PFO wetlands are characterized by woody vegetation that is 6 meters (approximately 20 feet) tall or taller and normally include an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer (Cowardin et al., 1979). In the Survey Area, forested wetlands represented approximately 20% of all wetland cover types. Vegetation communities for PFO wetlands in the Survey Area were dominated by the following species: red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica),* silky dogwood (*Cornus amomum*), common reed, purple loosestrife, skunk cabbage (*Symplocarpus foetidus*), and jewelweed (*Impatiens capensis*). The PFO portions of the wetland were located along the western extent of the Survey Area and contained little to no muck (<10%).

4.2.2 *PSS Wetland Vegetation*

PSS wetlands are dominated by woody vegetation less than 20 feet in height (Cowardin et al., 1979). The species found in PSS wetlands include true shrubs, saplings, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Scrub-shrub wetlands represented approximately 30% of all wetland cover types in the Survey Area. Vegetation communities for PSS wetlands in the Survey Area were dominated by the following species: red maple, green ash, silky dogwood, black willow (*Salix nigra*), honeysuckle (*Lonicera spp*.), common reed, purple loosestrife, and jewelweed (*Impatiens capensis*). The PSS portions of the wetland were primarily located to the north of the 1.3-acre Sediment Investigation/Remediation Area, where it appears there was historically a green ash swamp. The ash has died, leaving a

regenerating layer of ash and red maple saplings, with a dense understory of common reed. This area was comprised of approximately 30% mucky soils, with the remainder of the PSS habitat having dense saturated mineral soils.

4.2.3 *PEM Wetland Vegetation*

PEM wetlands are non-tidal wetlands characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. PEM wetlands usually are dominated by perennial plants (Cowardin et al., 1979). These wetlands are commonly referred to by a host of terms, including marsh, wet meadow, and slope seeps. Marshes represent emergent wetlands that are flooded for all or most of the year. These wetlands are often associated with currently active or fallow agricultural areas, abandoned or reclaimed mined areas, slopes, depressions, and the edges of open waterbodies. In the Survey Area, emergent wetlands are the primary cover type, representing approximately 40% of all wetland cover types. Vegetation communities for PEM wetlands in the Survey Area consisted of the following species: common reed, purple loosestrife, narrowleaf cattail, and to lesser degrees lakeshore rush, northern water plantain, common rush (*Juncus effusus*), and marsh bedstraw (*Galium palustre).* The PEM portion of the Survey Area was located directly east of the capped landfill and comprises 100% of the 1.3-acre Sediment Investigation/Remediation area. The PEM wetlands were comprised of an open water cattail marsh in the center, surrounded by a dense stand of common reed and purple loosestrife that extended throughout the overall wetland. The common reed has formed thick dense mats of dead stems, making passage difficult. Approximately 60% of the PEM wetland contains 6" – 10" of organic muck. No sedge tussocks/hummocks were observed in the wetland.

4.2.4 *PUB Wetland Vegetation*

PUB cover types include wetlands with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent (Cowardin et al., 1979). These wetlands are seasonally to permanently flooded. PUB areas are dominated by mineral soils with a small percentage of the soil surface covered by vegetation. In the Survey Area, unconsolidated bottom wetlands represented approximately 10% of all wetland cover types. Vegetation communities for PUB wetlands in the Survey Area consisted of the following species: narrowleaf cattail, purple loosestrife, lakeshore rush, and northern water plantain. The PUB portion of the wetland represents a small open water component of the marsh, with 2 to 4 feet of water over a thick organic layer of rotting stems and plant detritus on the bottom, from 12 to 18 inches deep.

4.2.5 *Vegetation Summary*

Common reed dominated all the wetland communities it was found in, shading out and competing with other herbaceous species, creating a monoculture on-Site. Along the shaded forest edges, and at the deeper open water fringes, the common reed gave way to other species, though many of these, such as purple loosestrife and honeysuckle are also invasive in origin. The thick, dense persistent stands of common reed throughout the Site are not ideal for bog turtles and inhibit

passage of the turtles through the wetland. No sedge hummocks or tussocks were observed, and combined with the shading from the common reed, limits nesting opportunities for bog turtles.

4.3 Bog Turtle Habitat Evaluation - Soils

Soil profiles were examined with a hand auger, and muck depth was probed with a 10' pole. The soils within the Survey Area are part of the Fluvaquents-Udifluvents complex, frequently flooded. Soil profiles revealed a varying layer of organic matter overlaid on a dense, gleyed sandy loam. This organic layer varied from 1-2 inches of saturated organic loam along the wetland margins, to moderate (4-8 inch) layers of organic muck in the marsh, to deep deposits of decaying plant material on the bottom of the open water portions in the center of the Survey Area. The mineral soils underlying the organic layer were dense and compacted. In dry years, the outer fringes of the wetland likely dry out, but the center of the marsh likely retains water permanently. Stone aggregate can be found underlying the organic layer along the landfill cap and extending into the wetland parallel to the railroad bed, likely from past landfill remediation and rail construction efforts. This acts as a restrictive layer, inhibiting a bog turtles' ability to burrow.

4.4 Bog Turtle Habitat Evaluation - Hydrology

The hydrology of the wetland within the Survey Area appears to be permanent, with spring high water retreating from the fringes, and the deeper, central portion of the wetland retaining water permanently throughout the year. Field reconnaissance concluded that the shallow emergent marsh in the Survey Area is relatively flat and generally enclosed within a shallow basin. During periods of heavy precipitation and during wetter periods of the year (e.g., spring), surface waters within the wetland may be discharged overland to the north, toward a large tributary of Muddy Brook. Hydrologic sources for this wetland are likely based on surface precipitation, and water table depth. No streams are present in the Survey Area, nor were any springs/seeps found. Water movement through the wetland is inhibited by dense common reed growth, with the water percolating through the dense dead stems of previous years' growth. Occasional muskrat or other game trails provide open water passage through the reeds but are not especially common. Surficial flow is further inhibited by the presence of a raised commuter rail bed along the eastern border of the wetland. The nearest passage around the rail bed is a culvert for a tributary of Muddy Brook, located approximately 1,000 feet to the north of the Survey Area.

4.5 Project Phase 1 Habitat Summary

In summary, one wetland was found in the Survey Area, wetland W-WH-1. This wetland is part of a larger wetland complex that extends off-Site and is connected to the Great Swamp wetland complex to the east, though this connection is restructured due to the presence of a raised rail bed on the eastern side of the Survey Area. This active rail bed creates a physical barrier for turtle migration, and a dead painted turtle (*Chrysemys picta*) was found trapped between the raised steel rails at the time of survey (**Attachment C** photolog). For bog turtles to move from the great swamp to the Survey Area, they would have to cross under the railroad tracks though a culvert located 1,000 feet to the north of the Site, and then bend south through a dense PSS and PEM wetland, dominated by common reed to reach the wetland at the landfill. The dense vegetation restricts passage, and with no streams found entering the Survey Area, the bog turtles would have to walk

overland to reach the Site. Conversely, if there were any relict populations at the Site, the absence of raised tussocks onsite means the bog turtles would have to travel overland to find a suitable nesting habitat, and would also face the same dense restrictive vegetation, making the long term viability of any relic animals onsite questionable.

The Survey Area does contain approximately 44% mucky organic soils, with the majority of these located in the PEM and PUB sections around the deep marsh adjacent to the landfill. Underlying this muck is a dense mineral soil layer that would inhibit the ability for bog turtles to dig deeply into the substrate. There is a thick organic layer of decaying vegetation and muck on the bottom of the open water component, but the warm open water habitat lacks the cool springs and upwellings that bog turtles prefer for hibernation. These conditions, combined with a lack of observed seeps and springs, limit the Site's usefulness as a winter hibernaculum.

The wetland itself was part of a restoration/remediation effort in the 1980's, and this legacy leaves the water quality of the Site compromised. The wetland does not have a basic pH, as is preferred for bog turtle habitat, and is contaminated with various materials, notably PCB, due to its history as a landfill. Based on the Site history, presence of contamination, measured nitrogen levels (elevated), and pH measurements, the wetland does not provide the preferred conditions and alkaline pH normally associated with the bog turtle species.

Overall, though the Site does contain mucky substrates, but much of this soil is too shallow for adequate submersion. The Site lacks the cold-water springs and open sedge meadow habitat preferred by bog turtles. The presence of the invasive common reed and purple loosestrife, the Site's contamination, and the loss of interconnectivity due to the railroad, further degrade the Site's overall habitat value for bog turtles. In conclusion, the wetland within the Survey Area has low to very low potential as suitable bog turtle habitat, and the presence of bog turtles utilizing this wetland unlikely. I would conclude that the Site is not suitable bog turtle habitat.

5.0 REFERENCES

Cowardin, L.M., V. Carter, F. Golet and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.

New York State Department of Environmental Conservation.2020. Environmental Resource Mapper. Available online at https://gisservices.dec.ny.gov/gis/erm/. Accessed (05/22/2020]

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United States Army Corps of Engineers 2016. National Wetland Plant List, Version 3.3. http://wetland_plants.usace.army.mil/. U.S Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Waterways Experiment Station, Vicksburg MS.

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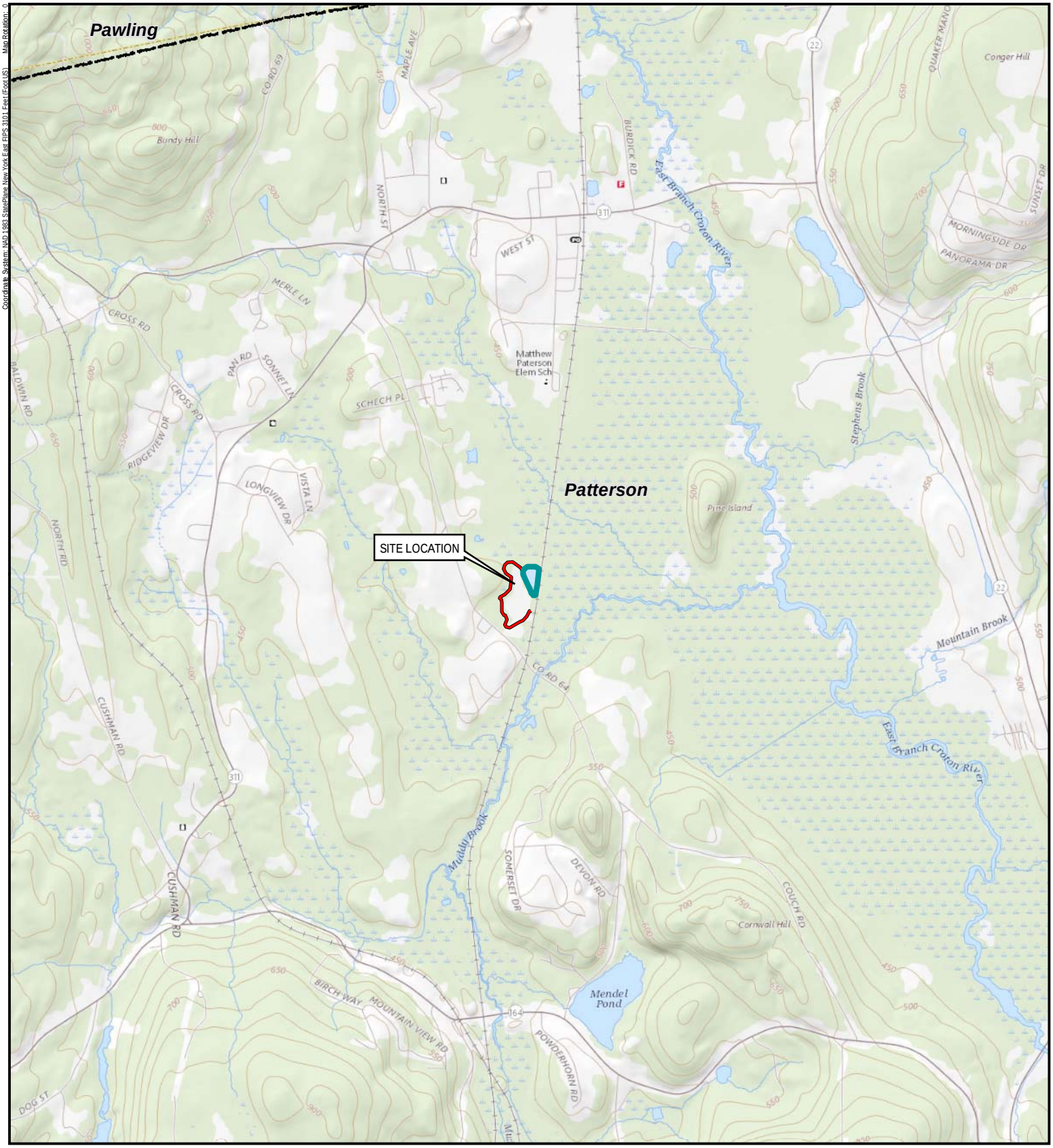
Attachment A

FIGURES



NEW YORK OVERVIEW

LEGEND

- TOWN BOUNDARY
- SEDIMENT INVESTIGATION/REMEDIATION AREA
- FENCE LINE

Brewster Quadrangle
Putnam County
Town of Patterson

1:24,000
1 " = 2,000 '

1. BASEMAP IMAGERY FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

0 1,000 2,000 Feet

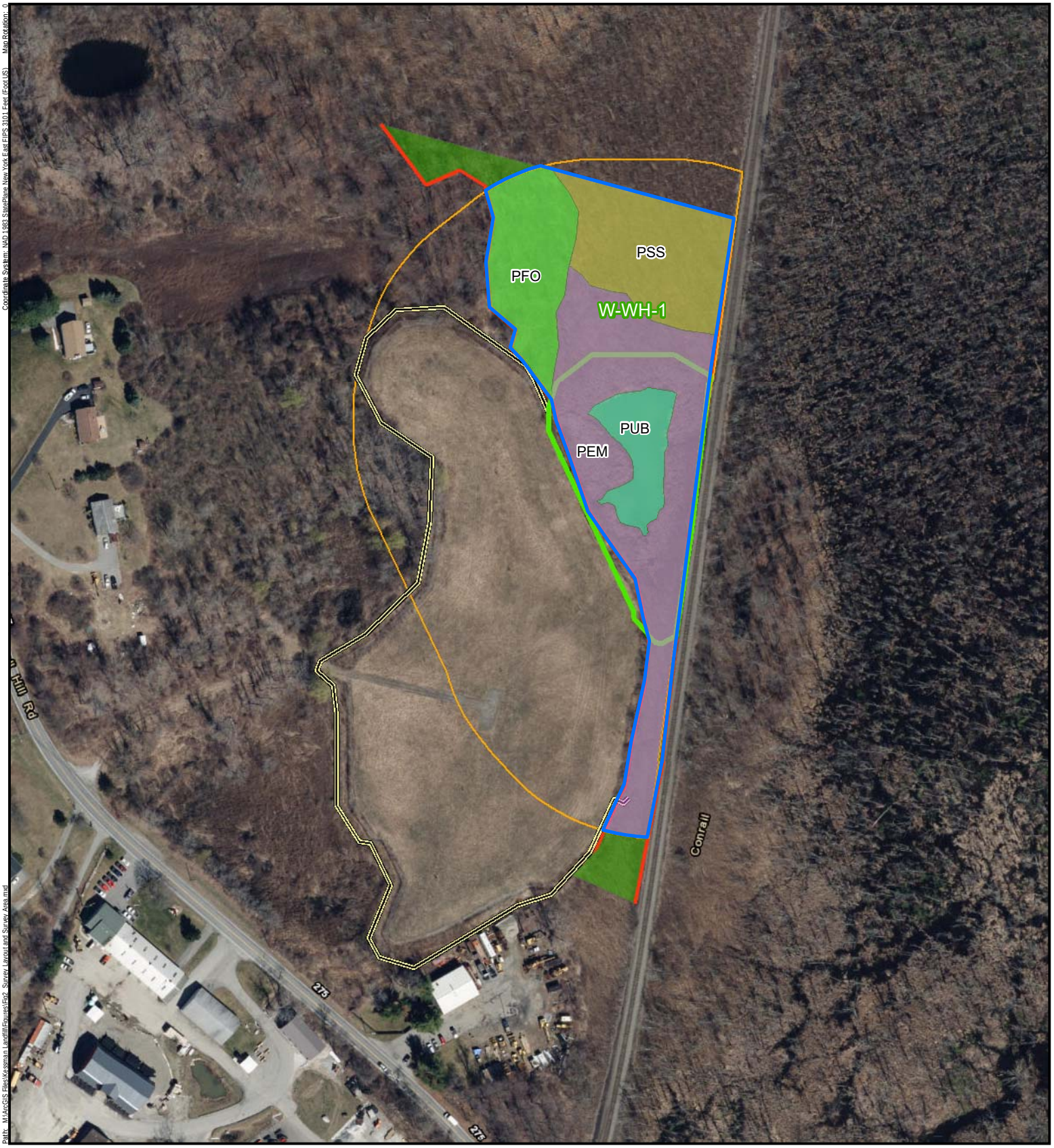
PROJECT:
CROSS-COUNTY SANITARY / KESSMAN LANDFILL
286 CORNWALL HILL ROAD, PATTERSON, NEW YORK 12563

TITLE:
SITE LOCATION MAP

DRAWN BY:	L. BOCHKIS	PROJ NO.:	259633
CHECKED BY:	M. GIAMBATTISTA		
APPROVED BY:	D. CHOQUETTE		**FIGURE 1**
DATE:	JULY 2020		

TRC
1099 WALL ST WEST, SUITE 250B
LYNDHURST, NJ 07071

Path: M:\ArcGIS Files\Kessman Landfill\Figures\Fig1_Site Location Map.mxd
Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Post US) Map Rotation: 0



LEGEND

- SAMPLING AREA
- FENCE LINE
- WETLAND_BOUNDARY
- WETLAND AREA (APPROX.)
- SURVEY AREA

N

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.

2. RESOURCE DELINEATION COMPLETED IN THE FIELD BY TRC IN AUGUST AND DECEMBER 2019..

1:2,400

1 " = 200 '

0 200 Feet

PROJECT:

CROSS-COUNTY SANITARY / KESSMAN LANDFILL
286 CORNWALL HILL ROAD, PATTERSON, NEW YORK 12563

TITLE:

SITE LAYOUT AND SURVEY AREA

DRAWN BY:	L. BOCHKIS	PROJ NO.:	259633
CHECKED BY:	M. GIAMBATTISTA		
APPROVED BY:	D. CHOQUETTE		**FIGURE 2**
DATE:	JULY 2020		

TRC
1099 WALL ST WEST, SUITE 250B
LYNDHURST, NJ 07071

ATTACHMENT B

PHASE 1 BOG TURTLE SURVEY REPORTING DATA SHEET

Phase 1 Bog Turtle Habitat Survey Data Form** for the **Northern Population Range

(Revised April 29, 2020) Please do not edit document.

Wetland ID: W-WH-1

PNDI # (for PA):_____

General Info

Property/Project Name Kessman Landfill

Coordinates -73.607, 41.498 **Project Type** Remediation

Entity Requesting Phase 1 Survey Cross County Sanitary/Kessman Landfill

County/Township/Municipality 286 Cornwall Hill Road, Town of Patternson, Putnam County, NY

Lead Surveyor Duane Choquette **Affiliation** Biologist - TRC

Other Assistants Present None

Date/Condition

Date of Survey 6/1/2020 **Time In** 9:00AM **Time Out** 3:00PM **Air Temp.** 65 F ° C°

Last Precipitation __ < 24 hours X 1-7 days __ > 1 week __ unknown **Drought conditions?** X Yes __ No __ Unknown

Drought Index*[1] (Circle): none (D0) D1 D2 D3 D4 **Wetland Photos Taken** X Yes __ No (Provide photo location map)

Notes (*e.g.*, details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed):

The region was experiencing abnormally dry conditions at the time of survey.

Wetland Info

Wetland Size 4,202 acres, if known **# Wetlands w/in Project Area[2]** 1

Estimate wetland size (acres) __ < 0.1 __ 0.1 - 0.5 __ 0.5 - 1 __ 1 - 2 X 2 - 4 __ 5+ __ 10+

Estimate % Canopy Cover*[3] __ 0% __ ≤ 5 X 6-20 __ 21-40 __ 41-60 __ > 60

Hydrology and Soils (check all that apply): **use additional pages to further discuss pertinent general wetland information**

__ Springs/Seeps __ Springhouse __ Trib/Stream X Pond X Stormwater X Iron Bacteria __ Watercress

X Water Visible on Surface Evidence of Flooding __ Yes __ No If yes, (__ Seasonal Flooding[4] __ Routine Flooding[5])

X Rivulets (4 inches deep) __ Subsurface Tunnel/Rivulets __ Tire Ruts (_____inches deep)

__ Small Puddles/Depressions (____ inches deep) X Saturated soils present? If yes, year-round? X Likely __ Unlikely __ Unk

X Yes __ No Are there any signs of disturbance to *hydrology* (*e.g.*, drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver activity)?

There is a drainage swale located along the eastern edge of the wetland, located along the railroad bed's toe of slope. Hydrology flows south along this ditch.

Estimate time period (in years) of disturbance*: __ ≤ 5 __6-10 X 11-20 __ > 20

For ditches that may be present, is there bog turtle habitat? If yes, describe:

No, the ditches present were dry at the time of survey, lined with rocky rip-rap covered in a thin organic layer (2-4" thick). The entire ditch was colonized by dense stand of Phragmites australis.

[1] (*) Denotes reference to the **Supplemental Information** document that provides more details on this particular question.

[2] Each wetland must have a separate Phase 1 habitat assessment data form completed.

[3] Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are most prominent in the wetland and have the highest percent of coverage compared to other species.

[4] Seasonal flooding in wetlands/streams can occur as a result of spring snow melt/heavy rain that increases water levels in these systems.

[5] Routine flooding refers to tidally-influenced wetland/stream systems or the occurrence of normal rain patterns throughout the year.

Wetland ID: W-WH-1

Wetland Info

X Yes __ No Are there any signs of disturbance to ***vegetation*** (*e.g.*, mowing, pasturing, burning)? If yes, describe:
Vegetation adjacent to the landfill is periodically mowed. Vegetation along the rail bed is cut back and maintained, but in both cases this is a very narrow strip of the overall wetalnd vegetation. In general the wetland is undisturbed and does not recieve any forms of cutting or moving.

Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mowing, burning observed[6] 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season

Soil types present*:
Fluvaquents-Udifluvents complex, frequently flooded.

How much suitable habitat is in this wetland? Estimate acreage or percentage: 44% (approximately 1.87 acres)

Wetland Type	% of Total Wetland	% of Wetland Type w/Muck	Avg. Muck Depth	Max. Muck Depth
PEM Portion of Wetland:	40	60	8 in.	16 in.
PSS Portion of Wetland:	30	30	4 in.	12 in.
PFO Portion of Wetland:	20	10	4 in.	12 in.
POW/PUB Portion of Wetland:	10	100	12 in.	18 in.

Wetland Type/Vegetation

CIRCLE all vegetation* from list below that is dominant (≥ 20% for each wetland type listed above) and add other species you observe that are not listed in table in the "notes" space provided below or in the extra table cells.

Alder Spp. *Alnus* spp.	Common Reed *Phragmites australis*	Jewelweed *Impatiens capensis*	Rice Cutgrass *Leersia oryzoides*	Spicebush *Lindera benzoin*	Willow spp. *Salix* spp.
Alder-leaved Buckthorn *Rhamnus alnifolia*	Dogwood Spp. *Cornus* spp.	Mile-A-Minute *Persicaria perfoliata*	Rough-leaved Goldenrod *Solidago patula*	Spike-Rush *Eleocharis palustris*	Woolly-fruited Sedge *Carex lasiocarpa*
American Elm *Ulmus americana*	Duck Potato *Sagittaria latifolia*	Multiflora Rose *Rosa multiflora*	Sensitive Fern *Onoclea sensibilis*	Swamp Rose *Rosa palustris*	Woolly Bulrush or Woolgrass *Scirpus cyperinus*
Arrowhead *Sagittaria latifolia*	Eastern Red Cedar *Juniperus virginiana*	Poison Sumac *Toxicodendron vernix*	Shrubby Cinquefoil *Dasiphora fruticosa*	Sweetflag *Acorus calamus*	Yellow-Green Sedge *Cyperus esculentus*
Carpetgrass *Axonopus fissifolius*	Eastern Tamarack *Larix laricina*	Porcupine Sedge *Carex hystericina*	Skunk Cabbage *Symplocarpus foetidus*	Tearthumb Spp. *Polygonum* spp.	
Cattail *Typha* spp.	Grass-of-Parnassus *Parnassia glauca*	Purple Loosestrife *Lythrum salicaria*	Smooth Sawgrass *Cladium mariscoides*	. Tussock Sedge *Carex stricta*	
Cinnamon Fern *Osmundastrum cinnamomeum*	Inland sedge *Carex interior*	Red Maple *Acer rubrum*	Soft Rush or Common Rush *Juncus effusus*	Viburnum Spp. *Viburnum* spp.	
Common Boneset *Eupatorium perfoliatum*	Japanese Stiltgrass *Microstegium vimineum*	Reed Canary Grass *Phalaris arundinacea*	Sphagnum Moss *Sphagnum* spp.	White turtlehead *Chelone glabra*	

Notes on additional plant species (*e.g.*, sedge, rush, grass, shrub, tree species):
Dead green ash stand to the north, with younger sapling regeneration.

[6] No grazing, mowing, or burning is given a "2" rank as this is considered more harmful to bog turtle wetlands than Rank 1 (light to moderate grazing or mowing). Light to moderate habitat management is beneficial to suppressing succession of native and non-native plant species.

Wetland ID: W-WH-1

Describe surrounding landscape (*e.g.*, wetlands, forest, subdivision, agricultural field, fallow field, etc.):

There is a capped landfill to the south that is routinely mowed. There is a raised active rail bed to the east, seperating the site from a large green ash, red maple, skunk cabbage and Phragmytes swamp to the east. To the north are mixed canopy decidious forests, with residential communities and agricultural fields to the west.

Landscape Info

How much of this wetland is located **off-site** (*i.e.*, outside the property boundaries or right-of-way)?

__ None of it – the entire wetland is within the property boundaries

X Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

X__ None of it __ All of it __ Part of it (____ acres or ____% of the off-site portion)

Is there potential bog turtle habitat **within 300 feet***? __ Yes X__ No __ Unk Habitat **off-site**? X Yes __ No __ Unk

If yes, how did you conclude this?

Species

Were any bog turtles observed? __ Yes X No If yes, how many?_____

Other herps observed? X Yes __ No If yes, which ones?

Chrysemys picta, Chelydra serpentina, Lithobates catesbeianus, Anaxyrus americanus

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.

*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

Lead Surveyor Opinion

__ Yes X No __ Unsure The **hydrology** criterion for bog turtle habitat is met.

X Yes __ No __ Unsure The **soils** criterion for bog turtle habitat is met.

__ Yes X No __ Unsure The **vegetation** criterion for bog turtle habitat is met.

__ Yes X No __ Unsure This wetland **HAS** potential bog turtle habitat (fair to good quality).

_ Yes X __ No __ Unsure This wetland **HAS** potential bog turtle habitat (low to very low quality).

_X_ This wetland does **NOT** have potential bog turtle habitat. __ **UNSURE** if suitable habitat is present.

Notes (How did you reach this opinion?):

The wetland is permanently innundated and ponded, with shallow muck soils over a hard restrictive substrate. The plant community consistes almost entirely of Phragmites australis and Lythrum salicaria, with Typha angustifilia in the deeper habitats. Thereare no cold water seeps/spring present, and interconnectivity to surrounded habitat is limited by railroad bed and roads.

Lead Surveyor – **please sign** below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Print Name Duane M Choquette **Signature** Duane Choquette

Date 6-18-2020

Contact Information dchoquette@trccompanies.com 518-222-1383

****Important**** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment 3 in *Guidelines for Bog Turtle Surveys* for checklist) and submit to your local state wildlife agency and U.S. Fish and Wildlife Service Field Office (see Attachment 1 in *Guidelines for Bog Turtle Surveys*).

Additional space for notes, color photos, or maps/sketch of wetland (or attach printed map with each wetland type carefully outlined; include all wetland types [PEM, PSS, PFO, POW/PUB], streams/ditches, north arrow, property/project borders, and areas of core bog turtle habitat. Include **color photos** for each wetland assessed and separate Phase 1 data forms for each when submitting to agencies, as well as any reptile and amphibian species you encounter, if possible.

Attachment C

PHOTOGRAPHS

Cross-County Sanitary / Kessman Landfill	
Photo: #1 **Date**: 6/1/2020 **ID**: N/A **Comments**: Kessman Landfill, looking north over capped landfill toward wetland W-WH-1	
Photo: #2 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: Photo looking north across wetland W-WH-1	

Cross-County Sanitary / Kessman Landfill	
Photo: #3 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: Looking North across open marsh in center of wetland W-WH-1	
Photo: #4 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: Mucky iron rich soils under the phragmites canopy.	

Cross-County Sanitary / Kessman Landfill	
Photo: #5 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: Looking west from Rail bed across PSS habitat. Primarily dead green ash, with red maple and green ash saplings surrounded by common reed.	
Photo: #6 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: Looking south along rail bed. Wetland W-WH-1 is on the right site, the Great Swamp is located on the left.	

Cross-County Sanitary / Kessman Landfill	
Photo: #7 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: dead painted turtle trapped between railroad tracks on rail bed.	
Photo: #8 **Date**: 6/1/2020 **ID**: W-WH-1 **Comments**: mucky shallow water along toe of landfill.