Justin Starr, P.G.
New York State Department of Environmental Conservation
Division of Environmental Remediation, Bureau C
625 Broadway, 11th Floor
Albany, NY 12233

Arcadis of New York, Inc.
One Lincoln Center
110 West Fayette Street
Suite 300
Syracuse
New York 13202
Phone: 315 446 9120
Fax: 315 449 0017
www.arcadis.com

Date: July 10, 2023
Our Ref: 30169483
Subject: 2023 Qualitative Site Inspection
NYSEG Cortland-Homer Former MGP Site
Site No. 7-12-005

Dear Mr. Starr,

On behalf of the New York State Electric & Gas Corporation (NYSEG), this Site Inspection Letter has been prepared for the Cortland-Homer Former Manufactured Gas Plant (MGP) site, Operable Unit No. 2 (OU-2) located in Homer, New York (the site). This letter presents the results of the 2023 qualitative monitoring event including, adaptive management and corrective action recommendations to support meeting the Year 1 performance criteria and has been prepared in accordance with the Preliminary Monitoring and Maintenance plan included as Appendix G to the April 2020 Remedial Design Report (Remedial Design).

The following sections of this letter report include:

- An introduction summarizing the performance criteria applicable to Year 1 and the monitoring objectives and observations to support potential adaptive management and corrective actions for the restoration.
- Inspection methods used to complete the qualitative monitoring event.
- Summary of observations made in comparison to “as-built” conditions and Year 1 performance criteria including photographs and site locations to reference on site figures.
- Proposed adaptive management and corrective actions to be performed to support meeting the performance criteria.

Introduction

The spring qualitative monitoring and inspection was performed to evaluate the restoration success and to provide an initial assessment for determining if any of the performance criteria may not be met. Qualitative monitoring is focused on identifying:

- Tree and shrub survival/mortality;
- Herbaceous cover quality;
- Presence of non-native invasive and nuisance species; and
- Erosion control issues associated with the restored channel and banks.

If qualitative monitoring identifies any significant issues affecting the restoration, then corrective actions and/or adaptive management measures may be implemented to ensure that performance criteria are met.

Corrective actions may include use of proactive invasive species management, reseeding herbaceous vegetation areas as necessary, or replanting trees that did not survive. Adaptive management measures may include:

- Adjusting to current climate conditions;
- Implementing a more rigorous watering plan to combat prolonged drought conditions; and
- Reviewing if a restored area or specific species is showing signs of stress or more significant mortality than other species.

The Year 1 performance criteria for plantings includes:

- Trees – 100% survival;
- Shrubs – 80% survival;
- Herbaceous ground cover – at least 85% average cover;
- Vegetation below the mean high-water line (MHWL)
  - Shrubs – 80% total cover by Year 5
  - Emergent wetland vegetation – 80% total cover by Year 5
- Invasive plant species ground cover – 0% of prohibited species, less than 5% regulated species.

The inspection results and recommended corrective actions are outlined in the following sections.

Site Inspection Methods

During the spring qualitative monitoring event, meander surveys were performed within each of the restored areas (i.e., Area 1, Area 2). The meander survey is used to visually assess and evaluate any significant stability or erosion issues within the banks and associated floodplain or habitat areas, plantings and herbaceous ground cover conditions, herbivore damage, or human usage, and assess the presence of any invasive plant species within or adjacent to the restored habitats.

The eastern shoreline and floodplain areas at Area 1 are located on private property and were not accessible to the meander survey. Instead, a drone survey was used to assess this area and consisted of two separate orthomosaic grid flights at heights of 150 feet (ft) and 120 ft above ground level. Both collections were performed at nadir using a DJI Phantom 4 V2, with 80% endlap and 70% sidelap (403 and 613 photos respectively). The imagery was orthorectified and processed into mosaics with ground sample distance of 0.48 and 0.38” respectively (see Figure 1). A Visible Atmospherically Resistant Index (VARI) was calculated for each orthomosaic to assess the relative vegetative health of different areas in Area 1.

Photographs to assess the restored areas for both Area 1 and 2 were established at fixed assessment points with predetermined cardinal directions at 12 of the targeted 20 locations for Area 1 and all 17 targeted locations for Area 2 (Figures 1 and 2, respectively), fixed assessment point photos are provided as Attachment 1A. Within the eastern shoreline and floodplain area for Area 1, the current drone aerial imagery has been georeferenced to detail current conditions and is shown on Figure 1. During the quantitative monitoring event later this year, the remaining eight fixed assessment point photographs at Area 1 will be taken to document current conditions. Additional photographs were collected at any identified problem areas (e.g., presence of nuisance or invasive plant species, bank sloughing, etc.) (Attachment 1B) and locations for potential corrective action needs were noted and mapped on Figures 4 and 5.

Justin Starr, P.G.
New York State Department of Environmental Conservation
July 10, 2023

Site Inspection Observations – Area 1

Restoration activities for Area 1 were substantially completed in November 2021**.** Year 1 qualitative monitoring was performed by Arcadis staff on May 25, 2023.

Trees, Shrubs and Live Stakes

As-built conditions for Area 1 included 244 trees, 2,201 shrubs, and 453 live stakes. Trees and shrubs along the western shoreline generally appeared to be in good health with little mortality observed. Herbivore damage was evident along the western and eastern shoreline and floodplain (Attachment 1B, Photos 3 and 11, respectively). Analysis of drone images identified approximately 32 dead tree plantings on the eastern shoreline of restoration Area 1 (Figure 3). Despite the observed mortality within the eastern shoreline, one example of natural recruitment was observed, as a maple sapling was present and healthy. A formal tree and shrub mortality census will be performed as part of the quantitative monitoring effort planned for August/September 2023.

In general, live stakes appeared to be successful along the western shoreline lower bank areas with evident budding and leafing and limited mortality observed. Approximate survival of the black willow, red-osier dogwood, and silky dogwood stakes is estimated to be 40 to 50% across both shorelines. A large portion of live stakes installed on the western shoreline were either not budded out or damaged from high flows and herbivore activity. One example of poor live stake success along the eastern shoreline is shown in Photo 12 (Attachment 1B).

Observations during this Year 1 qualitative inspection indicate that the performance criteria for tree and shrub survival may not be achieved. Further discussion is provided below with respect to potential corrective action needs.

Herbaceous Cover and Emergent Vegetation

As-built conditions for Area 1 included the seeding of herbaceous cover. Habitat-specific seed mixes were sowed to re-establish vegetative species within the wet meadow, floodplain, bank, and maintained grass planting areas. Approximately 1,400 emergent plugs were installed, comprised of two species, Arrow arum (*Peltandra virginica*) and American bur-reed (*Sparganium americanum*), to restore this emergent vegetative community found in the near-shore inundated planting areas. Overall herbaceous cover appeared in good condition with wildflowers beginning to bloom on the upper banks and into the floodplain along most of the western shoreline. Two areas lacking vegetative cover were identified, one on the western bank and one along the eastern shoreline (Attachment 1B, Photos 5 and 10, respectively). Some bare spots were noted within the restored areas of the western shoreline.

Aerial analysis of the eastern shoreline indicated that none of the planting areas can be reliably estimated at over 85% vegetative cover. Cover was estimated using a VARI index (Figure 6), which classes relative vegetative vigor by using the ratio of intensities of different discrete bands of visible imagery (Green - Red) / (Green + Red – Blue). The ratio emphasizes green reflectance while accounting for objects which may reflect highly across the whole visible spectrum (i.e. bare rock or concrete). Inspection of the imagery confirmed that areas with a VARI score greater than zero appeared to indicate vegetation, while those with VARI scores of zero or less indicated rock, bare dirt, water, or pavement. The VARI image was accordingly classified as vegetation versus non-vegetation, and each planting area was assessed for percentage of vegetative cover. Estimated percent cover ranged from 11% in the West Bank area to 80% in the Floodplain Planting area. True percentages may vary from the

estimates (in particular, the low percentage in the West Bank area may be due to slight spatial shifts in the area boundary or orthoimage), but none of the planting areas can be assumed to be over 85% cover.

Within portions of the emergent vegetation planting zones and along other portions of the shallow and depositional shoreline edges of the river natural recruitment of watercress (*Nasturtium spp.)* was observed (Attachment 1B, Photo 2). Both the Arrow arum and American bur-reed plantings were not observed in most of the targeted emergent planting zones for Area 1. High flow conditions may have disturbed the emergent planting areas in this area. Additional monitoring during the quantitative visit will further determine whether any planted species survived.

The observations during this Year 1 qualitative inspection indicate that the herbaceous cover and emergent vegetation appear to be on track to meet the performance criteria for the western shoreline and potential corrective action measures may be required along the eastern shoreline to improve performance.

Bank Stability

General soil stability was observed to be in good condition with rip-rap cover along portions of the lower bank, sheet flow drainages, and coir logs installed on bank slopes. Coir logs appeared intact and were in their installed locations. Some minor erosion was observed on banks, near soil-choked rip-rap materials, in lower drainage swale, and in floodplain swale (Attachment 1B, Photos 4, 5, 6, 7, and 9). These locations will be further monitored during the quantitative event to determine whether any require further action.

Invasive Species

The primary invasive species identified in Area 1 are garlic mustard (*Alliaria petiolata*) (Attachment 1B, Photo 8) and a species of non-native honeysuckle (*Lonicera spp.*), which was sparsely observed within the area. A significant stand of garlic mustard was observed along the western bank below the downstream bridge. Potential nuisance species, yellow rocket (*Barbarea vulgaris*), was observed along portions of the western shoreline (Attachment 1B, Photo 1).

Signs of Stress

Herbivory was the only evident sign of stress observed in Area 1. The northeast portion of the bank and floodplain planting areas along the eastern bank showed signs of heavy herbivore damage to shrubs that may have been from deer browse based on the abundant tracks found in this area (Attachment 1B, Photo 11) and poor live stake survival (Attachment 1B, Photo 12). One example of herbivore damage was documented on the western shore (Attachment 1B, Photo 3), showing a beaver chew on a willow shrub.

Site Inspection Observations – Area 2

Restoration activities for Area 2 were completed in November 2022**.** Year 1 qualitative monitoring was performed by Arcadis staff on May 25, 2023.

Trees, Shrubs, and Live Stakes

As-built conditions for Area 2 included 257 trees, 2,100 shrubs, and 251 live stakes. In general, the tree plantings appeared in good health with evident budding and leafing on a majority of the individuals observed. Some specimens indicated stress due to recent hard frost and drought conditions indicated by wilted leaves and only some basal leaf growth. Shrub mortalities were observed in the floodplain and upper bank areas and appeared to primarily impact two species, serviceberry (*Amelanchier arborea*) and red-osier dogwood (*Cornus sericea*), with the predominant shrub mortality observed for serviceberry throughout Area 2 (Attachment 1B, Photo 16). A census of serviceberry and red-osier dogwood mortality determined that approximately 60 individual plantings were dead (45 in the upper bank planting area, 15 in the floodplain planting area). Despite these mortalities, the remaining shrubs were relatively healthy and the overall performance criteria 80% survival within the first two growing seasons is being met. Shrubs in the upper bank and floodplain planting area will be reassessed during the quantitative monitoring visit later in the year.

Live stakes planted on the eastern shore within the lower bank area below the MHWL were not observed. Live stake mortality will be reassessed during the quantitative monitoring visit with recommendations provided to meet performance criteria.

Herbaceous Cover and Emergent Vegetation

Overall herbaceous cover appeared in poor condition with large portions of the restoration area showing limited ground cover. In the upland laydown area, herbaceous cover has not been successfully established (Attachment 1B, Photo 13). Avian species known to nest in barren, rocky areas (Killdeer) were observed nesting in the upland restoration area. The floodplain tree and shrub planting area were also observed to have sparce herbaceous cover (Attachment 1B, Photo 14). Herbaceous cover between top of bank and transitional areas was estimated between 35 to 50%. Areas where herbaceous seed mixes were applied appeared to lack sufficient moisture for plant survival with dry, exposed soil prevalent. Herbaceous cover was improved on the northern banks of Area 2, suggesting there is greater water availability or protection from prolonged, intense sun exposure. Observations of emergent plantings had some arrow arum (*Peltandra virginica*) developing on the east bank (Attachment 1B, Photo 17).

Bank Stability

General soil stability was observed to be in good condition with rip-rap cover along portions of the lower bank and coir logs installed on bank slopes. Coir logs appeared intact and were in their installed locations. Some instances of minor erosion were documented on banks, including sloughing in the transitional/lower bank below installed coir log (Attachment 1B, Photos 15 and 19).

Invasive Species

One invasive species was identified in Area 2 during the inspection, as garlic mustard (*Alliaria petiolata*) (Attachment 1B, Photo 18).

Justin Starr, P.G.
New York State Department of Environmental Conservation
July 10, 2023

Signs of Stress

The primary indicator of stress was the lack of herbaceous cover and significant shrub mortality. Site inspectors observed dry soil conditions in the upland, laydown area and the upper bank area. These observations suggest this site has not had sufficient water to facilitate plant establishment and survival.

Corrective Actions

Field observations for Restoration Area 1 and 2 determined that site conditions may not meet performance criteria for Year 1. Recommended corrective actions to improve tree and shrub survivability, expand herbaceous cover, improve emergent plantings, protect woody plants from herbivory, and remove invasive species, include:

Area 1

- Trees – Limited tree replacement will be required. Tree replacement quantity required to meet 100% survival within the first two growing seasons will be determined during the quantitative inspection. Replacements will be installed either within the fall planting window or the following spring.
- Shrubs – The total shrub survival performance standard (80%) is currently being met. If conditions during the quantitative inspection differ and the performance criteria is not met, then replacement shrubs that have shown higher survival and resistance to herbivores will be proposed.
- Herbaceous cover – Herbaceous planting areas will likely not meet the performance criteria (85% cover). Fall reseeding of these areas is recommended.
- Emergent vegetation and live stakes – Observations indicate the need to monitor their establishment, as loss was evident during this inspection. Recommendations will be determined following the quantitative inspection.
- Invasive Species – Invasive plant species garlic mustard (*Alliaria petiolata*), non-native honeysuckle (*Lonicera spp.*), and nuisance species yellow rocket (*Barbarea vulgaris*) were observed in the restored areas. Proactive invasive plant species management will be implemented in September 2023 to prevent further establishment within the restored planting areas.

Area 2

- Trees – Due to observed frost damage and drought conditions, tree mortality will be reassessed during the quantitative inspection. Tree replacement, if necessary, will be completed within the fall planting window or the following spring.
- Shrubs – Shrub mortalities were observed in the floodplain and upper bank areas. The quantitative inspection will determine if shrub survival criteria (80%) is being met. If not, replacement shrubs that are more tolerant of low moisture conditions and high sun exposure will be recommended for replanting.
- Herbaceous cover – Upland and bank planting areas indicate low herbaceous ground cover and pending the quantitative monitoring results, most likely will require fall re-seeding and implementation of a watering plan.
- Emergent vegetation and live stakes – Observations indicate the need to monitor their establishment, as loss was evident during this inspection. Recommendations will be determined following the quantitative inspection.
- Invasive Species – Garlic mustard (*Alliaria petiolata*) was observed in the restored areas. Proactive invasive plant species management will be implemented in September 2023 to prevent further establishment within the restored planting areas.

Justin Starr, P.G.
New York State Department of Environmental Conservation
July 10, 2023

Corrective Action Implementation

To date no corrective actions or adaptive management actions have been implemented since restoration activities were completed. A summer inspection is planned for August/September of 2023 to collect quantitative data. Following the summer inspection, NYSEG will develop a plan for implementing recommended corrective actions within the calendar year or prior to next year's monitoring events. This may include fall planting of trees, shrubs, and emergent vegetation, reseeding activities, and implementation of a watering plan, as necessary to facilitate plant establishment and survival.

Please contact Mark Castro at 203-233-1245 or mark_castro@avangrid.com or Levia Terrell at 607-423-1652 or lterrell@nyseg.com or me with questions or comments.

Sincerely,
Arcadis of New York, Inc.

Joe Bistrovich

Email: joe.bistrovich@arcadis.com
Direct Line: 315.671.9697
Mobile: 315.427.4585

CC. Mark Castro, NYSEG
Levia Terrell, NYSEG
Tracy Blazicek, CHMM, NYSEG
Mark Gravelding, Arcadis
Jason Vogel, Arcadis

Enclosures:
Figures
Attachment 1A – Fixed Assessment Photograph Log
Attachment 1B – Inspection Photograph Log
Attachment 2 – Monitoring Inspection Checklists

Figures

LEGEND

- PHOTO LOCATION WITH DIRECTION
- EMERGENT PLANTING AREA
- FLOODPLAIN PLANTING AREA
- WET MEADOW PLANTING AREA
- INUNDATED PLANTING AREA
- WEST BANK PLANTING AREA

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: DRONE IMAGERY FLOW BY ARCADIS 05/25/2023; OVERLAID ON ESRI WORLD IMAGERY ACCESSED 6/9/2023

0 200 400

GRAPHIC SCALE IN FEET

N

NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

AREA 1 FIXED PHOTO POINT LOCATIONS

ARCADIS

FIGURE
1

Path: T:_env\nyseg\Cortland-Homer\Vegetation\Monitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 1 Area 1 Fixed Reference Locations Last Saved By: kbrum 6/9/2023

LEGEND

- PHOTO LOCATION WITH DIRECTION
- FLOODPLAIN PLANTING AREA
- INUNDATED PLANTING AREA
- UPLAND PLANTING AREA

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: NYS ITS GIS PROGRAM DATED 2022 ACCESSED 6/14/2023

0 100 200

GRAPHIC SCALE IN FEET

N

NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

AREA 2 FIXED PHOTO POINT LOCATIONS

ARCADIS

FIGURE
2

Path: T:_ENV\NYSEG\Cortland-Homer\VegetationMonitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 2 Area 2 Fixed Reference Locations Last Saved By: ACarlone 6/14/2023

LEGEND

TREE PLANTING

- ALIVE
- DEAD
- EMERGENT PLANTING AREA
- FLOODPLAIN PLANTING AREA
- WET MEADOW PLANTING AREA
- INUNDATED PLANTING AREA
- WEST BANK PLANTING AREA

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: DRONE IMAGERY FLOW BY ARCADIS 05/25/2023; OVERLAID ON ESRI WORLD IMAGERY ACCESSED 6/13/2023

0 200 400

GRAPHIC SCALE IN FEET

N

NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

AREA 1 EASTERN SHORELINE AERIAL ANALYSIS

ARCADIS

FIGURE
3

Path: T:_env\nyseg\Cortland-Homer\VegetationMonitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 3 Area 1 Eastern Shoreline Aerial Analysis Last Saved By: bhurn 6/13/2023

LEGEND

- PHOTO LOCATION WITH DIRECTION
- EMERGENT PLANTING AREA
- FLOODPLAIN PLANTING AREA
- WET MEADOW PLANTING AREA
- INUNDATED PLANTING AREA
- WEST BANK PLANTING AREA

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: DRONE IMAGERY FLOW BY ARCADIS 05/25/2023; OVERLAID ON ESRI WORLD IMAGERY ACCESSED 6/9/2023

0 150 300

GRAPHIC SCALE IN FEET

N

NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

AREA 1 POTENTIAL CORRECTIVE ACTION LOCATIONS

ARCADIS

FIGURE
4

Path: T:_env\nyseg\Cortland-Homer\VegetationMonitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 4 Area 1 Corrective Action Locations Last Saved By: kfrum 6/9/2023

LEGEND

- PHOTO LOCATION WITH DIRECTION
- FLOODPLAIN PLANTING AREA
- INUNDATED PLANTING AREA
- UPLAND PLANTING AREA

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: NYS ITS GIS PROGRAM DATED 2022 ACCESSED 7/6/2023

0 100 200

GRAPHIC SCALE IN FEET

N

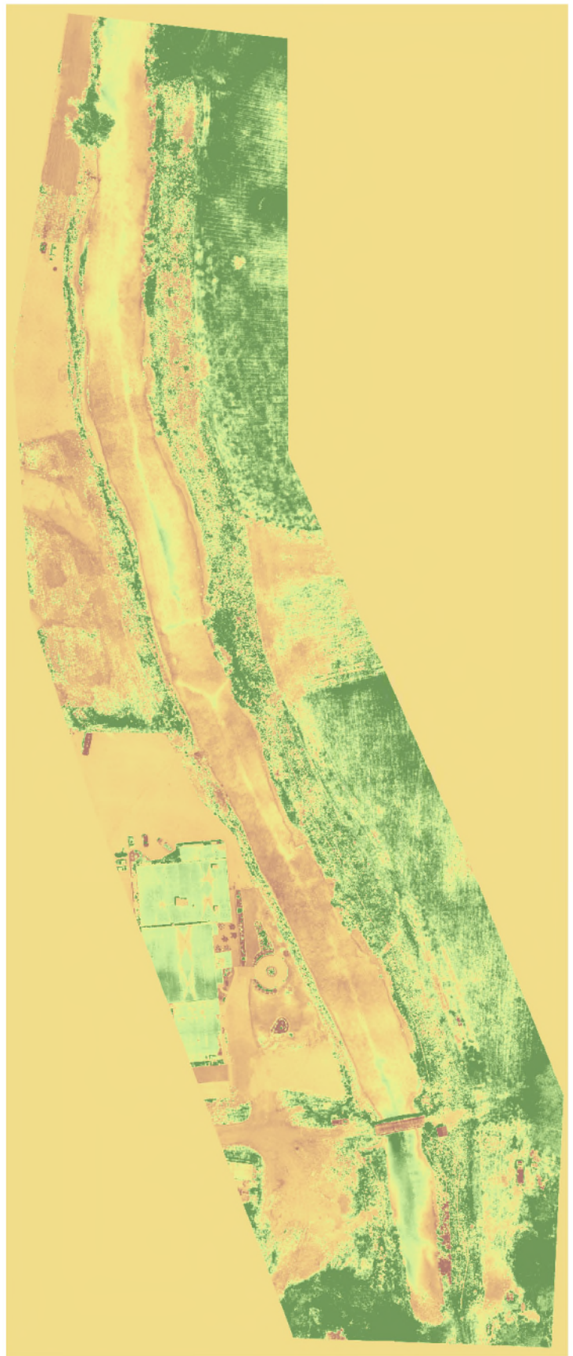
NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

AREA 2 POTENTIAL CORRECTIVE ACTION LOCATIONS

ARCADIS

FIGURE
5

Path: T:_ENV\NYSEG\Cortland-Homer\VegetationMonitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 5 Area 2 Corrective Action Locations Last Saved By: ACarlone 7/6/2023



LEGEND

VARI INDEX

5.76626

-3.36497

NOTES:

1. PROJECTION: NAD 1983 STATEPLANE NEW YORK CENTRAL FIPS 3102 FEET
2. BASEMAP SOURCE: DRONE IMAGERY FLOW BY ARCADIS 05/25/2023

0 200 400

GRAPHIC SCALE IN FEET

N

NYSEG - CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
OPERABLE UNIT 2, SITE INSPECTION REPORT

GROUND COVER
VARI INDEX

ARCADIS

FIGURE
6

Path: T:_env\nyseg\Cortland-Homer\VegetationMonitoring\VegMonitoring_2023\VegMonitoring_2023.aprx\Figure 6 VARI Index Last Saved By: ldrum 6/13/2023

Attachment 1A

Fixed Assessment Photograph Log

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P1

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P1.

Coordinates:
42.622328
-76.183639

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northeast.

Photo: P2

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P2.

Coordinates:
42.622357
-76.183528

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P3

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P3.

Coordinates:
42.621557
-76.183739

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing South.

Photo: P4

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P4.

Coordinates:
42.620648
-76.183818

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P5

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P5.

Coordinates:
42.621196
-76.183360

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

Photo: P6

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P6.

Coordinates:
42.620679
-76.183094

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing South.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P7

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P7.

Coordinates:
42.620039
-76.182952

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing North.

Photo: P8

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P8.

Coordinates:
42.619899
-76.182847

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P9

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P9.

Coordinates:
42.619150
-76.182337

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

Photo: P10

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P10.

Coordinates:
42.618981
-76.182331

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P11

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P11.

Coordinates:
42.618670
-76.182358

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing North.

Photo: P12

Location:
Area 1 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P12.

Coordinates:
42.618476
-76.181989

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing North.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P21

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P21.

Coordinates:
42.611597
-76.183211

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northeast.

Photo: P22

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P22.

Coordinates:
42.611581
-76.183231

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southwest.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P23

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P23.

Coordinates:
42.611424
-76.183469

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast

Photo: P24

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P24.

Coordinates:
42.610815
-76.183410

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P25

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P25.

Coordinates:
42.610308
-76.181011

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

Photo: P26

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P26.

Coordinates:
42.610139
-76.181170

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P27

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P27.

Coordinates:
42.610467
-76.181748

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southwest.

Photo: P28

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P28.

Coordinates:
42.610661
-76.182411

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P29

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P29.

Coordinates:
42.610751
-76.182382

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

Photo: P30

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P30.

Coordinates:
42.610841
-76.182750

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P31

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P31.

Coordinates:
42.611036
-76.183092

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing South.

Photo: P32

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P32.

Coordinates:
42.611201
-76.182995

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P33

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P33.

Coordinates:
42.611451
-76.183020

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southwest.

Photo: P34

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P34.

Coordinates:
42.611617
-76.182749

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P35

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P35.

Coordinates:
42.611898
-76.182795

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southwest.

Photo: P36

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P36.

Coordinates:
42.611778
-76.182308

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Northwest.

PHOTOGRAPH LOG

Fixed Assessment Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: P37

Location:
Area 2 – Fixed Point Photo Locations

Description:
Fixed-Point Photo Location P37.

Coordinates:
42.612462
-76.182751

Date: 05/25/2023

Taken By:
Nick Firman

Notes:
Facing Southwest.

Attachment 1B

Inspection Photograph Log

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 1

Location:
Area 1 – Corrective Action Photo Locations

Description:
Potential nuisance species on west shoreline (Yellow rocket).

Coordinates:
42.622178
-76.183542

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing West.

Photo: 2

Location:
Area 1– Corrective Action Photo Locations

Description:
Natural recruitment of watercress in western emergent area.

Coordinates:
42.621885
-76.183556

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 3

Location:
Area 1– Corrective Action Photo Locations

Description:
Woody stems of willow with signs of beaver damage, western inundated area.

Coordinates:
42.621834
-76.183580

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing West.

Photo: 4

Location:
Area 1– Corrective Action Photo Locations

Description:
Minor bank erosion on western shoreline.

Coordinates:
42.620940
-76.183255

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing West.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 5

Location:
Area 1– Corrective Action Photo Locations

Description:
Western bank with low vegetative cover with erosion potential.

Coordinates:
42.620666
-76.183161

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing South.

Photo: 6

Location:
Area 1– Corrective Action Photo Locations

Description:
Minor bank erosion in soil choked area on western shoreline.

Coordinates:
42.619766
-76.182609

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Southwest.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 7

Location:
Area 1– Corrective Action Photo Locations

Description:
Erosion in drainage swale on western shoreline.

Coordinates:
42.619032
-76.182144

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Southwest.

Photo: 8

Location:
Area 1– Corrective Action Photo Locations

Description:
Stand of invasive garlic mustard downstream of bridge on western lower bank.

Coordinates:
42.618789
-76.182183

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing East.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 9

Location:
Area 1– Corrective Action Photo Locations

Description:
Minor erosion and bare herbaceous cover in floodplain swale on eastern shoreline.

Coordinates:
42.619527
-76.182047

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing East.

Photo: 10

Location:
Area 1– Corrective Action Photo Locations

Description:
Transitional bank area on eastern shoreline with low herbaceous ground cover.

Coordinates:
42.620804
-76.182913

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing East.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 11

Location:
Area 1– Corrective Action Photo Locations

Description:
Area of heavy shrub herbivore damage on eastern shoreline.

Coordinates:
42.621168
-76.182988

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Southeast.

Photo: 12

Location:
Area 1– Corrective Action Photo Locations

Description:
Representative photo of low live stake survival on eastern shoreline.

Coordinates:
42.621524
-76.183228

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Southeast.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 13

Location:
Area 2 - Corrective Action Photo Locations

Description:
Lay down area with sparse vegetative cover.

Coordinates:
42.610155
-76.180923

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Northwest.

Photo: 14

Location:
Area 2 - Corrective Action Photo Locations

Description:
Shrub and tree planting area with no herbaceous cover.

Coordinates:
42.610225
-76.181359

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Northwest.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 15

Location:
Area 2 - Corrective Action Photo Locations

Description:
Lower bank erosion area under coir log.

Coordinates:
42.610461
-76.182001

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Northeast.

Photo: 16

Location:
Area 2 - Corrective Action Photo Locations

Description:
Representative photo of shrub mortality to serviceberry.

Coordinates:
42.610564
-76.182147

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing North.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 17

Location:
Area 2 - Corrective Action Photo Locations

Description:
Emergent planting area for arrow arum.

Coordinates:
42.611051
-76.183189

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing North.

Photo: 18

Location:
Area 2 - Corrective Action Photo Locations

Description:
Invasive garlic mustard on bank.

Coordinates:
42.611345
-76.183098

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Northeast.

PHOTOGRAPH LOG

Inspection Photos
NYSEG – Cortland-Homer Former MGP Site
OU-2, Area 1 & Area 2
Homer, New York

Photo: 19

Location:
Area 2 - Corrective Action Photo Locations

Description:
Lower bank erosion.

Coordinates:
42.611735
-76.182869

Date: 05/25/2023

Taken By:
Jason Vogel

Notes:
Facing Northeast.

Attachment 2

Monitoring Inspection Checklists

Bi-Annual Monitoring Inspection Checklist
Cortland-Homer Former MGP Site

I. GENERAL INFORMATION

Inspection Date:	May 25, 2023 - Area 1
Conducted By:	Jason Vogel, Nick Firman, Don Reed, Anna Butler
Weather Conditions:	High 40s to mid-50s F, Sunny, Light-Medium winds 10-20mph

II. INSPECTION SUMMARY

1. Vegetation

A. Woody Vegetation *(Note evidence of damage from trespassing or herbivory, note physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

Live stakes budding and leafing, dogwood live stakes leafed out with pretty good survival along western shoreline, not many observed dead. Natural recruitment - maple sapling. Signs of herbivore damage (beaver chew) to willow shrub. Approximately 30 to 50% survival on dogwood stakes within Area 1. No tree collar protection on any tree plantings. Area of heavy shrub herbivore damage along eastern shoreline - Photo 11. Poor live stake survivial along eastern shoreline - Photo 12.

B. Herbaceous Vegetation *(Note evidence of areas of bare/sparse vegetation; note any damage from trespassing or herbivory; note any physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

Upper bank cover looks good along western bank - wildflowers coming in. Nesting field sparrow in ground cover in upland planting area. Transitional bank area with low ground cover - Photo 10. Eastern bank indicates areas of lower herbaceous ground cover within the floodplain portion of the restored area from review of aerial imagery.

C. Presence of Invasive Species *(Note the invasive species present. If a quantitative assessment is performed, complete the attached field form for each planting area. If "prohibited" invasive species are observed, record the species, location, and size of the population observed.)*

Lonicera spp. - bush honeysuckle present in a few western top of bank areas. Stand of garlic mustard below downstream bridge. Several potential nuisance species observed, including yellow rocket and spatter dock.

D. Vegetation below MHWL *(Note evidence of damage from trespassing or herbivory, note physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

No emergent plugs observed. Natural recruitment of watercress in emergent area.

2. Riverbank Stability *(Note any physical changes since last inspection; note evidence of significant erosion [e.g., slope failure, ruts, gullies, washouts, or sloughing]; note other conditions that could jeopardize the performance of the completed remediation actions. If a quantitative assessment is performed, complete the attached field form for each transect.)*

Coir logs in place - remain where staked. Along western shoreline: minor bank erosion - Photo 4; area of minor erosion and lack of vegetative cover in bank area - Photo 5; minor bank sloughing in soil-choke/rip-rap area - Photo 6; erosion in drainage swale - Photo 7; and minor erosion in floodplain swale - Photo 9. Eastern shoreline banks were stable, some portions of the inundated shoreline indicated washout, but sediment deposition was present.

3. Other Observations *(Confirm that repair/maintenance activities identified during prior inspection, if any, have been performed; note any other general observations.)*

III. FOLLOW-UP MAINTENANCE AND REPAIR ACTIVITIES

Recommend some minor repairs to erosion damage observed along western shoreline. Invasive species removal/treatment. Tree replacement with herbivore protection. Use quantitative monitoring event to determine potential need for shrub replacements if survival is less than performance criteria.

ATTACH ADDITIONAL INFORMATION AS APPROPRIATE

Bi-Annual Monitoring Inspection Checklist
Cortland-Homer Former MGP Site

I. GENERAL INFORMATION

Inspection Date:	May 25, 2023 - Area 2
Conducted By:	Jason Vogel, Nick Firman, Anna Butler
Weather Conditions:	High 40s to mid-50s F, Sunny, Light-Medium winds 10-20mph

II. INSPECTION SUMMARY

1. Vegetation

A. Woody Vegetation *(Note evidence of damage from trespassing or herbivory, note physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

Trees are alive with some minor stress from recent frost. Serviceberry and red-osier dogwood appear to show highest shrub mortality. Photo 4 - dead shrub example. Meander survey count of dead shrubs in Area 2: Bank planting area = 45, upland planting area =15. Still above performance criteria, but stress from prolonged dry conditions may inhibit survival through summer.

B. Herbaceous Vegetation *(Note evidence of areas of bare/sparse vegetation; note any damage from trespassing or herbivory; note any physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

Laydown area - sparse herbaceous cover, needs re-seeding - Photo 1. Upland area - limited to no herbaceous ground cover present.

Tree and shrub planting area - limited herbaceous cover - Photo 2. Top of bank to transitional area, seeded herbaceous cover approximately 35 to 50%. Northern portion of Area 2 has more herbaceous vegetation, presumably from less sun exposure.

C. Presence of Invasive Species *(Note the invasive species present. If a quantitative assessment is performed, complete the attached field form for each planting area. If "prohibited" invasive species are observed, record the species, location, and size of the population observed.)*

Garlic mustard on upper bank - Photo 6.

D. Vegetation below MHWL *(Note evidence of damage from trespassing or herbivory, note physical changes since last inspection. If a quantitative assessment is performed, complete the attached field form for each planting area.)*

Arrow arum plugs are alive and emerging - Photo 5.

2. Riverbank Stability *(Note any physical changes since last inspection; note evidence of significant erosion [e.g., slope failure, ruts, gullies, washouts, or sloughing]; note other conditions that could jeopardize the performance of the completed remediation actions. If a quantitative assessment is performed, complete the attached field form for each transect.)*

Coir logs stable on bank slopes. Bank soil stable. Minor bank sloughing in transitional/lower bank, erosion below coir log - Photo 3. Erosion on lower bank below coir log - Photo 7.

3. Other Observations *(Confirm that repair/maintenance activities identified during prior inspection, if any, have been performed; note any other general observations.)*

Killdeer nesting in bare and rocky portion of lay down area.

III. FOLLOW-UP MAINTENANCE AND REPAIR ACTIVITIES

Recommend re-seeding laydown area including the floodplain and bank area. Implement a watering plan during seed germination period and assess for implementation this summer to protect tree and shrub plantings. Minor invasive species removal/treatment. Some minor erosion repairs to lower bank area present.

Replacement of dead shrubs with species more tolerant of dry, full sun conditions, if overall shrub survival is not meeting performance criteria.

ATTACH ADDITIONAL INFORMATION AS APPROPRIATE