nationalgrid

Lockport-Batavia Line #112

Rebuild Project

EM&CP Update

Replacement Appendix S
(Rare, Threatened and Endangered Species)

(Revised January 2026; Replaces Version Filed June 2025)

nationalgrid

Lockport-Batavia Line 112
Rebuild Project

Appendix S
Rare, Threatened, and Endangered Species

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF TABLES

LIST OF ATTACHMENTS

Table 1: RTE Species Summary Table

Table 1 is an overview of the rare, threatened, and endangered (RTE) species that were identified as having the potential to occur within the Project Area through consultations with the United States Fish and Wildlife Service (USFWS) and the New York Natural Heritage Program (NYNHP). Consultations with both USFWS and NYNHP are provided in Attachment A.

Table 1. Federally and State-Listed Rare, Threatened, and Endangered Species Potentially Present Within the Project ROW

Classification	Common Name	Scientific Name	Status	Protection Measures
Federally Listed[1]				
Mammals	Northern Long-eared Bat	*Myotis septentrionalis*	Endangered	Worker Education
	Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	Worker Education
Freshwater Mussels	Salamander Mussel	*Simpsonaias ambigua*	Proposed Endangered	Worker Education; Erosion and Sediment Controls
Insects	Monarch Butterfly	*Danaus plexippus*	Proposed Threatened	Nationwide Candidate Conservation Agreement
State Listed[2]				
Birds	Black Tern	*Chlidonias niger*	Endangered	Restrictive Work Dates; Pre-Construction Surveys; On-site Monitors; Worker Education
	Short-eared Owl	*Asio flammeus*	Endangered	
	Bald Eagle	*Haliaeetus leucocephalus*	Threatened	Worker Education
	Henslow's Sparrow	*Centronyx henslowii*	Threatened	Restrictive Work Dates; Pre-Construction Surveys; On-site Monitors; Worker Education
	King Rail	*Rallus elegans*	Threatened	
	Least Bittern	*Botaurus exilis*	Threatened	
	Northern Harrier	*Circus hudsonius*	Threatened	
	Pied-billed Grebe	*Podilymbus podiceps*	Threatened	
	Sedge Wren	*Cistothorus stellaris*	Threatened	
	Prothonotary Warbler	*Protonotaria citrea*	Rare (Protected Bird) – Imperiled in NYS	
	Ruddy Duck	*Oxyura jamaicensis*	Rare (Game Species) – Critically Imperiled in NYS	

Table 1. Federally and State-Listed Rare, Threatened, and Endangered Species Potentially Present Within the Project ROW				
Classification	**Common Name**	**Scientific Name**	**Status**	**Protection Measures**
Fish	Black Bullhead	*Ameiurus melas*	Rare – Critically Imperiled in NYS	Worker Education; Erosion and Sediment Controls
Plants	Frank's Sedge	*Carex frankii*	Endangered	Worker Education; Erosion and Sediment Controls
	Heart-leaved Plantain	*Plantago cordata*	Rare – Vulnerable in NYS	
Notes: [1]Source: USFWS Official Species List [2]Source: NYNHP consultation				

1.0 Introduction

CC Environment is working on behalf of the Niagara Mohawk Corporation d/b/a National Grid (National Grid) to assist with rare, threatened, and endangered species permitting and management for the proposed rebuild of a portion of the Lockport-Batavia 112 115kV transmission line (the "Project"). The Project spans approximately 19.7 miles between the City of Lockport, through the Town of Lockport and the Town of Royalton, to the Town of Alabama, New York (the "Project Area"). An Article VII application for this Project was filed with the New York State Public Service Commission ("Commission") on November 18, 2022. On September 24, 2024, the Commission issued the Certificate in an Order Adopting Joint Proposal ("Order") in this proceeding.

During the Article VII application and the subsequent development of the Environmental Management and Construction Plan ("EM&CP"), Fisher Associates, on behalf of National Grid, consulted with state and federal agencies on the potential presence of rare, threatened, and endangered species located within the Project's Transmission Line right-of-way ("ROW") or known to occur in close proximity to the Project. Correspondence with the United States Fish and Wildlife Service ("USFWS") and the New York State Department of Environmental Conservation ("NYSDEC") New York Natural Heritage Program ("NYNHP") identified one federally-listed and three species proposed for federal listing along with nine state-listed species as potentially occurring in the vicinity of the Project. Additionally, the NYNHP identified four species that were unlisted by New York State but had the heritage conservation status of imperiled or vulnerable in New York State. See Table 1 above for a summary of these species.

2.0 Mammals

Two mammal species were identified by USFWS as potentially occurring within the Project. One is listed as endangered, and the other is proposed for listing as endangered.

2.1 Northern Long-eared Bat

The northern long-eared bat ("NLEB") (*Myotis septentrionalis*) is a state- and federally listed endangered species. The decline of the NLEB population is related to the introduction of white-nose syndrome, a fungal disease first detected in New York in 2006, which has since spread to 40 states and nine Canadian provinces. Other threats to the species include habitat loss, wind turbine mortality, and disturbance during winter hibernation (USFWS 2025a).

NLEB is a wide-ranging species that utilizes a variety of forest habitats, roosting singly or in colonies underneath bark. During the winter, NLEB hibernates in colonies within caves and mines. Occasionally, the species will utilize manmade structures such as barns, sheds, and houses for roosting at various times of the year. USFWS has indicated that there are no known NLEB maternity roost trees within 1.5 miles or winter hibernacula within 5 miles of the Project Area (i.e.,

no on-site occupied habitat or designated critical habitat present, https://www.fws.gov/office/new-york-ecological-services-field/species).

2.2 Tricolored Bat

The tricolored bat (*Perimyotis subflavus*) is proposed for federal listing as endangered (as of September 13, 2022). A final listing decision has not been announced as of February 2025. It is also considered a NYS species of greatest conservation need. Like NLEB, tricolored bat populations have been severely affected by white-nose syndrome. This species also utilizes various forest habitats during the non-hibernating months, although they have been known to frequently inhabit human structures including barns, porch roofs, bridges, culverts, and concrete bunkers (USFWS 2025b). During winter, they hibernate in caves and mines. NYSDEC has not identified any known occurrence of this species within the Project Area. Location documentation is not available from USFWS at this time.

3.0 Birds

Eleven bird species were identified by the NYNHP as potentially occurring within the Project Area. Of these, two are state-listed endangered, seven are state-listed threatened, and two are considered rare in New York State.

3.1 Black Tern

The black tern (*Chlidonias niger*) is a state-listed endangered bird species. They are a semicolonial waterbird that nests on inland marsh complexes, ponds, mouths of rivers and shores of large lakes. The major cause of declines in NYS is habitat degradation (habitat quality, water quality, prey populations and agricultural pesticide contamination, NYNHP 2025a). Black terns are known to breed in marshes within Iroquois National Wildlife Refuge (NWR) and Tonawanda Wildlife Management Area (WMA). The impoundments they use for nesting change from year to year, but they are consistently present each year. Black terns are also regularly seen foraging on both Iroquois NWR and Tonawanda WMA, regularly crossing back and forth across Route 77 and the Project Area.

3.2 Short-eared Owl

The short-eared owl (*Asio flammeus*) is a state-listed endangered bird. It is a medium sized owl of open country including grasslands and marshlands, where they opportunistically hunt small mammals. NYS is at the southern edge of the short-eared owls breeding range; they are more common as winter residents with breeding being very limited within the state (NYNHP 2025b). A small number are typically seen each winter within John White and Tonawanda WMAs, Iroquois NWR, as well as within adjacent agricultural fields.

3.3 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is a state-listed threatened species. It is one of the largest raptors found in North America. Eagles prefer undisturbed areas near large lakes and reservoirs, marshes, and swamps, or stretches along rivers where they can find open water and their primary food, which is fish (NYNHP 2025c). They are a long-lived bird, with a life span in the wild of more than 30 years. Bald eagles mate for life, returning to nest in the same general area (within 250 miles) from which they fledged. Once a mating pair selects a nesting territory, they use it for the rest of their lives. Several bald eagle nests are known to occur in the vicinity of the Project Area on both Iroquois NWR and Tonawanda WMA. During the 2024/2025 breeding season, a new bald eagle nest was constructed within close proximity to Segment 3 of the Project Area within Tonawanda WMA. This nest failed in 2025, and NYSDEC is unsure whether the pair will use the nest again in the future.

3.4 Henslow's Sparrow

Henslow's sparrow (*Centronyx henslowii*) is a state-listed threatened species. It is a small songbird that occurs in loose colonies. Generally, habitat consists of fallow, weedy, often moist fields and meadows. In NYS, populations are very localized and found primarily in the central and western parts of the state (NYNHP 2025d). It was last documented within the Project Area vicinity in the 1990s, although suitable habitat is present within the John White and Tonawanda WMAs.

3.5 King Rail

The king rail (*Rallus elegans*) is a state-listed threatened species. The king rail is the largest and rarest of the secretive, marsh-dwelling rail species found in NYS. King rails utilize a variety of wetlands including brackish coastal marshes, tidal and non-tidal freshwater cattail marshes, prairie swamps, shrub swamps, and rice fields. In NYS, scattered breeding records have occurred in the southern Hudson River Valley and within large wetlands associated with the Great Lakes (NYNHP 2025e). Suitable habitat is available within the Project Area on the Tonawanda WMA and they have been documented breeding within 0.5 mile of the Project.

3.6 Least Bittern

The least bittern (*Botaurus exilis*) is a state-listed threatened marsh bird species. It is a small vocal bird that occurs in freshwater and brackish marshes with tall, dense emergent vegetation such as cattails, sedges and rushes that are interspersed with clumps of woody shrubs and open water. In NYS they thrive in the large expansive cattail marshes of the Great Lakes, the Finger Lakes, Lake Champlain and the St. Lawrence and Hudson River Valleys (NYNHP 2025f). They have been documented breeding within the vicinity of the Project Area within Tonawanda WMA.

3.7 Northern Harrier

The northern harrier (*Circus hudsonius*) is a state-listed threatened raptor species. An active forager, it flies low over various grasslands, marshes, and agricultural fields in search of prey. This species is more common during the winter, although breeding has been documented within the state. Breeding occurs in both freshwater and brackish marshes, tundra, fallow grasslands, meadows and cultivated fields (NYNHP 2025g). Northern harriers are documented most winters within the John White and Tonawanda WMAs as well as on surrounding agricultural fields.

3.8 Pied-billed Grebe

The pied-billed grebe (*Podilymbus podiceps*) is a state-listed threatened waterbird species. They inhabit marshes, lakes, ponds, bays, and slow-moving rivers where they forage in open water while building nests on floating platforms attached to emergent vegetation (NYNHP 2025h). They have been commonly documented breeding within the marshes at the Tonawanda WMA.

3.9 Sedge Wren

The sedge wren (*Cistothorus stellaris*) is a state-listed threatened species. New York is not within the core of the species' range, thus breeding is limited with records mostly in the St. Lawrence Valley and the Lake Ontario Plain (NYNHP 2025i). Its habitat includes wet meadows or hayfields dominated by sedges and grasses. Individuals or pairs have been documented periodically over the past ten years within John White and Tonawanda WMAs.

3.10 Prothonotary Warbler

The prothonotary warbler (*Protonotaria citrea*) is a state-listed rare species. It is considered a high priority species of greatest conservation concern, and a protected bird that is imperiled in NYS. The prothonotary warbler is a cavity-nester that breeds in wooded habitats near water, particularly in flooded bottomland hardwood forests, cypress swamps, and along large lakes and rivers. The first confirmed breeding ground in NYS was in 1931 at Oak Orchard Swamp in Genesee County, which is well above the core distribution of the species (NYNHP 2025j). Low numbers continue to be documented during the breeding season within Tonawanda WMA.

3.11 Ruddy Duck

The ruddy duck (*Oxyura jamaicensis*) is a state-listed rare species, considered critically imperiled, mainly due to its restricted breeding range within New York. Even so, it is still considered a game species along with the state's other duck species. The ruddy duck is a diving duck that inhabits large lakes, rivers, and bays. It is regularly seen within the Tonawanda WMA, especially during the migration period.

4.0 Fish

One fish species listed as rare in New York State was identified by the NYNHP as occurring within the vicinity of the Project Area.

4.1 Black Bullhead

The black bullhead (*Ameiurus melas*) is a state-listed rare, critically imperiled species. It inhabits muddy ditches, streams and ponds. Black bullheads are uncommon in NYS, restricted to the upper Genesee River drainage, a few locations in the Lake Ontario drainage, and in the St. Lawrence tributaries (NYSDEC 2023). This species was documented within the Tonawanda WMA in 2012.

5.0 Freshwater Mussels

One species of freshwater mussels was identified by USFWS as potentially occurring within the Project Area.

5.1 Salamander Mussel

The salamander mussel (*Simpsonaias ambigua*) is a federally proposed endangered species. This species is found in areas of moderate flow in rivers, streams, creeks, or lakes and require a rocky substrate (USFWS 2025c). Most of the streams within the Project Area are small, intermittent streams that do not provide adequate habitat for this species, although Mud Creek is considered a mussel screening stream.

6.0 Insects

One species of insect was identified by USFWS as potentially occurring within the Project Area.

6.1 Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is a federally proposed threatened species. Habitat for this species includes a wide variety of open habitats, including fields, wetlands, roadsides, and gardens, as long as flowering plants are available (USFWS 2025d). Milkweed (*Asclepias spp*.) is necessary for breeding, as females only lay eggs on these plants. Abundant habitat is available for this species along the length of the Project Area.

7.0 Plants

One plant species, listed as rare in New York State, was identified by the NYNHP as occurring within the vicinity of the Project Area.

7.1 Frank's Sedge

Frank's sedge (*Carex frankii*) is a state-listed endangered vascular plant. New York appears to be the northeastern range limit for this species, with only a few known populations in the state (NYNHP 2025k). It can be found along wet swales, wet meadows, marshes, roadsides, and adjacent to freshwater tidal swamps. According to NYNHP, it was documented 0.25 southwest of Segment 5 in 2022, which puts it outside of the Project Area, and likely in the vicinity of heart-leaved plantain (below).

7.2 Heart-leaved Plantain

The heart-leaved plantain (*Plantago cordata*) is a state-listed rare vulnerable vascular plant. There are nearly 30 known populations and sub-populations scattered along the Hudson River, but only a few in western NYS. In western NYS, it is found along gravelly streams through red maple hardwood swamps of the Tonawanda Oak Orchard Swamp drainage and is semi-aquatic in marshes and along streams (NYNHP 2025l). The heart-leaved plantain flowers from April through July with mature fruits present in August and September. A population of heart-leaved plantain, located approximately 0.6 miles outside of the Project Area on private property, was mapped and submitted to NYNHP by CC Environment in May 2022. According to NYNHP, it is also present within Tonawanda WMA along the same stream, which is outside of the Project Area.

8.0 Potential Impacts and Protection Measures

Potential impacts vary by species, with no anticipated impacts to some while others have the potential for minor, temporary impacts related to disturbance and the inaccessibility of habitat that may lie underneath mats for a period of time. These impacts would be greatest surrounding structures, where the majority of the work will be occurring.

Impacts to vegetation will be minimized as much as possible to protect habitat, including keeping vegetation clearing to a minimum and utilizing mats in sensitive areas. Even in areas where clearing must occur, impacts are expected to be temporary as all low growing vegetation will be allowed to regrow naturally. No permanent, long-term impacts to RTE species are expected from impacts to vegetation.

8.1 Bats

Habitat for protected bat species, including northern long-eared bat, tricolored bat, and little brown bat (*Myotis lucifugus*; NYS species of greatest conservation need) is limited within the Project Area, although it does exist adjacent to the Project. Some forest clearing will be necessary to widen the right-of-way and create clear and safe working areas. In accordance with Certificate Conditions, if protected bat species are identified near the Project, National Grid will consult with NYSDEC and comply with the State's endangered species laws. As this Project requires a federal

wetland permit from the US Army Corps of Engineers (USACE), USACE will need to consult with USFWS on federally listed species. National Grid will follow USFWS recommendations and requirements, as well as NYSDEC's established Best Management Practices (BMPs) for bats, which limits tree clearing to November 1 through March 31

8.2 Bald Eagles

As stated above in Section 3.3, Region 8 NYSDEC has identified a new bald eagle nest on Tonawanda WMA within the vicinity of the Project. Due to its initial failure, the future status of the nest is unknown. National Grid will remain in close consultation with NYSDEC about the nest's status. If the nest remains active, National Grid will follow the Certificate Conditions outlining avoidance and minimization requirements. This includes avoiding construction work within 0.25 miles (or 660 feet if there are visual barriers) of the active nests during the breeding season (January 1 – September 30). Monitoring by a qualified monitor can be conducted to alter these restrictive dates if they determine that the nest has failed or that the chicks have fledged and left the area.If work must occur within 0.25 miles of an active nest, a pre-approved on-site monitor will conduct continuous monitoring during all construction activities. If the eagles show signs of distress, then all work (except work necessary to protect property or human life) must immediately cease until consultation with DPS and NYSDEC.

8.3 Wintering Birds

As with breeding birds, there is the potential for temporary impacts to wintering raptors within the Project Area during construction. Both NYSDEC Region 8 and Region 9 acknowledged the presence of wintering short-eared owl and northern harrier within the Project Area. The Certificate Conditions state that from November 1 to March 30, work should be avoided within contiguous open fields greater than 25 acres within Occupied Habitat, which covers most of John White and Tonawanda WMA, along with adjacent private fields. As with breeding birds, National Grid will abide by these restrictions as much as possible, but work may need to occur within this window. If that is necessary, National Grid will follow Certificate Conditions and implement minimization strategies. Winter raptor surveys will be conducted by a pre-approved bird monitor within the two weeks prior to construction to assess presence and habitat use of these species. These surveys are intended to enable NYSDEC to determine whether the applicable date restrictions prohibiting construction should apply, or if they require alterations. They will also help inform the need for qualified, on-site monitors during construction. The winter raptor survey plan can be found in Attachment B.

8.4 Breeding Birds

There is the potential for temporary impacts to several species of breeding marsh birds and grassland birds within the Tonawanda WMA as acknowledged by NYSDEC's January 19, 2021 letter (Attachment A). These include least bittern, pied-billed grebe, sedge wren, and northern

harrier. NYSDEC has requested that work within the Tonawanda WMA avoids the breeding period (April 15 – September 1). Restrictive dates (April 23 – August 15) also apply to John White WMA due to the presence of breeding grassland birds. National Grid will abide by this restriction as much as possible, but due to the nature of construction schedules, this may not be possible. In accordance with the Certificate Conditions, National Grid will implement minimization measures if time of year restrictions cannot be met. The first minimization strategy is pre-construction surveys, in which National Grid will contract with a pre-approved qualified bird monitor to conduct pre-construction breeding surveys within marsh and grassland habitat present within the Project Area. These surveys are intended to enable NYSDEC to determine whether the applicable date restrictions prohibiting construction should apply, or if they require alterations. They will also help inform the need for qualified, on-site monitors during construction, another minimization strategy. Although king rail, Henslow's sparrow, and ruddy duck weren't specifically mentioned by NYSDEC during consultation, these species will be included within the pre-construction surveys. The marsh and grassland bird breeding bird survey plans can be found in Attachments C and D, respectively.

8.5 Aquatic Species

There are no potential direct effects anticipated to black bullhead or salamander mussel, as no in-stream work is proposed as part of this Project. Work within the marsh will be restricted to mats. A project-specific Stormwater Pollution Prevention Plan (SWPPP) has been developed, and sediment and erosion control BMPs will be implemented to prevent siltation events into nearby waterways that may contain these species.

8.6 Monarchs

Habitat for monarchs spans most of the Project Area, as the right-of-way has been maintained in ideal, early successional habitat. Impacts to this species are expected to be temporary, stemming from the loss of habitat within the immediate work areas and access paths. After construction and restoration have been completed, the habitat will once again be suitable for monarchs. National Grid has committed to maintaining monarch habitat on their properties through their inclusion within the Nationwide Candidate Conservation Agreement with Assurances, with Integrated Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands (March 2020).

8.7 Plants

There are no anticipated direct or indirect effects to heart-leaved plantain or Frank's sedge as the known populations lie outside of the Project Area. Erosion and sediment controls, as outlined in the SWPPP, will be strictly adhered to in order to prevent siltation into nearby areas that may contain this plant.

9.0 Summary

National Grid will endeavor to comply with by all Certificate Conditions to avoid and minimize potential impacts to RTE species. Education will be made a top priority for all Project personnel. This will take the form of simple pamphlets that can be taken into the field of RTE species which will include key identifying characteristics, posters of RTE species that will be posted inside construction trailers, and educational sessions during construction meetings. If any of these species are observed during construction, the Project's Environmental Inspector and Construction Supervisor will be notified immediately and all activities will cease within 500 feet of the observed individual. NYSDEC staff will then be contacted for further guidance. Prior to construction, NYSDEC will provide a list of staff and their contact information who should be consulted, with the expectation that someone will be available to discuss the situation within two hours of making the initial contact. Construction will recommence after authorization from NYSDEC.

NYSDEC restrictive dates will be followed as much as possible, although construction may need to occur within these timeframes. Under those circumstances, minimization strategies, such as pre-construction surveys and on-site monitors, will be implemented. Should NYSDEC determine that on-site monitors are required for work occurring within restrictive dates/locations, monitoring will begin a full day before the start of construction activities in the area. The monitor will be present on-site when any construction activities are occurring within the sensitive area. They will continuously monitor the surrounding area for the presence of listed species. Should they detect one within 500 feet of the construction activities, they will notify the Project's Environmental Inspector and will follow the procedure mentioned above. Daily reports detailing construction activity and observations will be filed and submitted to NYSDEC at the end of each week.

In the event these avoidance and minimization strategies are unsuccessful in preventing the taking (defined as killing, capturing, disturbing, harassing, or adverse impacts to occupied habitat) of any grassland or marsh species, National Grid will comply with the Net Conservation Benefit Plans (Attachments E & F).

10.0 References

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NYNHP. 2025b. Online Conservation Guide for *Asio flammeus*. Available online: https://guides.nynhp.org/short-eared-owl/. Accessed March 4, 2025.

NYNHP. 2025c. Online Conservation Guide for *Haliaeetus leucocephalus*. Available online: https://guides.nynhp.org/bald-eagle/. Accessed March 4, 2025.

NYNHP. 2025d. Online Conservation Guide for *Centronyx henslowii*. Available online: https://guides.nynhp.org/henslows-sparrow/. Accessed March 4, 2025.

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NYNHP. 2025f. Online Conservation Guide for *Botaurus exilis*. Available online: https://guides.nynhp.org/least-bittern/. Accessed March 4, 2025.

NYNHP. 2025g. Online Conservation Guide for *Circus hudsonius*. Available online: https://guides.nynhp.org/northern-harrier/. Accessed March 4, 2025.

NYNHP. 2025h. Online Conservation Guide for *Podilymbus podiceps*. Available online: https://guides.nynhp.org/pied-billed-grebe/. Accessed March 4, 2025.

NYNHP. 2025i. Online Conservation Guide for *Cistothorus stellaris*. Available online: https://guides.nynhp.org/sedge-wren/. Accessed March 4, 2025.

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USFWS. 2025b. Tricolored Bat. Available online: https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus. Accessed March 6, 2025.

USFWS. 2025c. Salamander Mussel. Available online: https://www.fws.gov/species/salamander-mussel-simpsonaias-ambigua. Accessed March 6, 2025.

USFWS. 2025d. Monarch. Available online: https://www.fws.gov/species/monarch-danaus-plexippus. Accessed March 6, 2025.

Attachment A. Agency Consultation

New York State
Department of Environmental Conservation
New York Natural Heritage Program

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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October 26, 2023

Nicole Lake
Fisher Associates
180 Charlotte St
Rochester, NY 14607

Re: Lockport-Batavia Line 112 Rebuild Project
County: Genesee, Niagara Town/City: City of Lockport, Lockport, Royalton, Alabama

Dear Ms. Dutcher:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 8 Office, Division of Environmental Permits, at dep.r8@dec.ny.gov and the NYSDEC Region 9 Office, Division of Environmental Permits at dep.r9@dec.ny.gov.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

The following state-listed animals have been documented at, or in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed.

For information about any permit considerations for the Genesee County section of the project, please contact the Permits staff at the NYSDEC Region 8 Office at dep.r8@dec.ny.gov, (585) 226-5400.
For information about any permit considerations for the Erie County section of your project, please contact the Permits staff at the NYSDEC Region 9 Office at dep.r9@dec.ny.gov, (716) 851-7165.

Birds

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
The following species has been documented at Segment 2.				
Short-eared Owl *Nonbreeding at the site*	*Asio flammeus*	Endangered		14568
The following species have been documented at or near Segments 3, 4, 4 Relocation, and 5.				
Northern Harrier *Nonbreeding at the site*	*Circus hudsonius*	Threatened		15013
Pied-billed Grebe *Breeding at the site*	*Podilymbus podiceps*	Threatened		10651
Black Tern *Breeding at the site*	*Chlidonias niger*	Endangered		9373
Least Bittern *Breeding at the site*	*Ixobrychus exilis*	Threatened		6222
Bald Eagle *Breeding within 100 yards of Segment 4 Relocation*	*Haliaeetus leucocephalus*	Threatened		11597
Short-eared Owl *Breeding and Nonbreeding at the site*	*Asio flammeus*	Endangered		11106
Henslow's Sparrow *Breeding within 0.5 mile*	*Ammodramus henslowii*	Threatened		5140
Sedge Wren *Breeding within 100 yards*	*Cistothorus stellaris*	Threatened		6231
King Rail *Breeding within 0.5 mile*	*Rallus elegans*	Threatened		1621

Note: This area is also a state-significant Raptor Winter Concentration Area.

Birds

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
The following species have been documented at Segment 7 of the project site.				
Northern Harrier *Nonbreeding at the site*	*Circus hudsonius*	Threatened		15013
Short-eared Owl *Nonbreeding at the site*	*Asio flammeus*	Endangered		15235
Sedge Wren *Breeding at the site*	*Cistothorus stellaris*	Threatened		14766
Pied-billed Grebe *Breeding at the site*	*Podilymbus podiceps*	Threatened		12479

Note: This area is also a state-significant Raptor Winter Concentration Area.

This report only includes records from the NY Natural Heritage database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants and rare animals have been documented at the project site, or in its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following animals, while not listed by New York State as Endangered or Threatened, are of conservation concern to the state, and are considered rare by the New York Natural Heritage Program.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Fish

Black Bullhead *Ameiurus melas* Unlisted Critically Imperiled in NYS

Documented at the corner of Segment 4 Relocation where Lewiston Road meets Feeder Road. 2012-08-20. 14638

Birds

Ruddy Duck *Oxyura jamaicensis* Game Species Critically Imperiled in NYS

Breeding

Documented within 200 yards northwest of Segment 4 Relocation. 2001-06-25. The birds were observed in an emergent marsh. 10205

Prothonotary Warbler *Protonotaria citrea* Protected Bird Imperiled in NYS

Breeding

Documented within 0.5 mile southwest of Segments 3, 4, and 4 Relocation. 2014-06-18. Tonawanda marshes. The birds were found in a flooded woodland dominated by green ash and red maple. 6538

The following plants are listed as Endangered or Threatened by New York State, and/or are considered rare by the New York Natural Heritage Program, and are a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Vascular Plants

Heart-leaved Plantain *Plantago cordata* Rare Vulnerable in NYS

Documented within 0.4 mile southwest of Segment 5. 1999-05-09: The plants occur along and within a small, mud bottom stream. With the exception of that portion flowing through the wildlife management area the stream is shaded by a mature canopy of hemlock and hardwoods. Those plants observed within the wildlife management area are primarily in the open and exposed to direct sunlight for much of the day. 10050

Frank's Sedge *Carex frankii* Threatened Imperiled in NYS

Documented within 0.25 mile southwest of Segment 5. 2022-08-13: On bare ground along small, seasonal creek in land to be developed. 10050

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

New York State
Department of Environmental Conservation
Region 8

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5400 | F: (585) 226-2830
www.dec.ny.gov

Sent via email

January 19, 2021

Ms. Nicole Dutcher
Fisher Associates
180 Charlotte Street
Rochester, New York 14607

Dear Ms. Dutcher:

RE: Endangered and Threatened Species Consultation
Lockport-Batavia # 112 Rebuild Project (Segments 4, 5 and 7)
Town of Alabama, Genesee County
DEC ID No. 0-9999-00232/00001

The New York State Department of Environmental Conservation (DEC) Region 8 office has received and reviewed your letter dated September 15, 2020 and received by DEC on September 16, 2020, requesting concurrence that the proposed activity is unlikely to result in an incidental take of an endangered or threated species subject to regulation under 6 NYCRR Part 182. Please see the Region 8 DEC comments regarding this project proposal below.

There are multiple threatened and endangered species that breed within the wetlands and grasslands of Tonawanda Wildlife Management Area (WMA), including Black Tern, Least Bittern, Pied-billed Grebe, Sedge Wren, Bald Eagle, and Northern Harrier. Therefore, work on the portion of the line that goes through Tonawanda WMA should avoid the breeding period for grassland and marsh birds which runs from April 23 – August 15th. Note, there may be some portions of the area through Tonawanda WMA where the breeding restrictions may not be necessary, but that would need to be discussed with Regional Biologists and a plan developed.

Currently, no known eagle nests are located in the immediate vicinity of the proposed work, so Bald Eagle restriction dates do not apply. However, this could change between now and the start of work if new eagle nests are established. Please consult with our Region 8 DEC office closer to the project start date to discuss any changes in restrictive dates.

The Northern Harrier and Short-eared Owl are known to winter in and around Tonawanda WMA and Iroquois National Wildlife Refuge (NWR) within both grassland and emergent habitat. At this point, DEC biologists do not see a need to impose wintering restrictive dates for the vicinity of the line as it passes through Tonawanda WMA, but closer to the project start date, depending on the most recent available information, DEC will make a decision related to the need for onsite monitoring immediately prior to and during the work period.

For the portion of the work in and around John White WMA, work should be completed outside the breeding dates for grassland birds (April 23 – August 15th). In this area, work should not take place during the wintering period (November 1 – April 30th) due to consistent presence of both Short-eared owl and Northern Harrier in this large grassland area. Wintering restrictive dates could potentially be shortened slightly on either end of this period if surveys show that these species are not currently using the area. This would need to be approved by DEC Region 8 staff. The ideal work period for John White WMA would be August 16th through October 30th.

In order to make a final determination staff need to see the plans and construction schedules to allow us to better assess the possible impacts of these species. There is potential for a Part 182 permit to be needed if the proposed project cannot follow the restrictive dates set forth in this letter.

Please note that many areas of the proposed project fall within State regulated freshwater wetlands, so an Article 24 permit may be required. An Article 15 Protection of Waters permit may also be required for disturbances to the bed or banks of any protected streams within the project area.

Should you have any questions regarding this letter, please contact Thomas Walker by phone at (585) 226-5402 or email thomas.walker@dec.ny.gov . Thank you.

Sincerely,

Robert B. Call
Deputy Regional Permit Administrator

ecc: Thomas Haley, NYSDEC Regional Permit Administrator- Region 8
Mike Wasilco, NYSDEC Regional Wildlife Manager- Region 8
Heidi Kennedy, NYSDEC Wildlife Biologist- Region 8
David Denk, NYSDEC Regional Permit Administrator- Region 9
Michelle Woznick, NYSDEC Division of Environmental Permits- Region 9

New York State
Department of Environmental Conservation
Region 9

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7165 | F: (716) 851-7168
www.dec.ny.gov

SENT VIA EMAIL

October 7, 2020

Ms. Nicole Dutcher
Fisher Associates
180 Charlotte Street
Rochester, New York 14607

Dear Ms. Dutcher:

Endangered and Threatened Species Consultation
Lockport-Batavia #112 Rebuild Project
(Segments 1, 2 and 3)
City of Lockport and Towns of Lockport and Royalton
Niagara County
DEC ID No. 0-9999-00233/0001

The New York State Department of Environmental Conservation (NYSDEC) Region 9 office has received and reviewed your September 15, 2020 letter requesting concurrence that the proposed activity is unlikely to result in an incidental take of an endangered or threatened species subject to regulation under 6 NYCRR Part 182. This office concurs with this determination for the segments of the project corridor located within Region 9 (Segments 1, 2 and 3) and no Part 182 incidental take permit will be required for the project in these segments.

However, NYSDEC has recorded one Short-eared Owl (*Asio flammeus*) occurrence near the right-of-way along Bulmore Road in the Town of Royalton. To minimize potential impacts to any roosting Short-eared Owls at this location, NYSDEC requests that Niagara Mohawk Power Corporation avoid working on Segment 2 of the project between Gasport Road and Oak Lane from November 1 to March 30. If project activities must occur at this location between these dates and a Short-eared Owl is flushed, the NYSDEC requests that Niagara Mohawk Power Corporation contact the Division of Fish & Wildlife (telephone: 716/851-7010) so that the location of this occurrence can be recorded.

Please be advised that Segments 1, 2 and 3 of this project include NYSDEC regulated freshwater wetlands and one regulated waterbody. Therefore, an Article 24 Freshwater Wetland permit and/or an Article 15 Protection of Waters permit may be required for this proposal.

Thank you for providing this office the opportunity to review this project. If you have any questions regarding this letter, please feel free to contact Ms. Michelle Woznick of this office at 716/851-7165.

Sincerely,

David S. Denk

Digitally signed by David S. Denk
DN: cn=David S. Denk, o=NYS DEC, ou=Div. of Env. Permits, email=david.denk@dec.ny.gov, c=US
Date: 2020.10.07 09:10:31 -04'00'

David S. Denk
Regional Permit Administrator

MRW

ecc: Ms. Connie Adams, NYSDEC Division of Fish and Wildlife
Ms. Jacquie Walters, NYSDEC Division of Fish and Wildlife
Mr. Thomas Haley, NYSDEC Division of Environmental Permits, Region 8

United States Department of Interior
Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 02/13/2025 14:07:54 UTC
Project Code: 2023-0124546
Project Name: Lockport-Batavia Line 112 Rebuild Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2023-0124546
Project Name: Lockport-Batavia Line 112 Rebuild Project
Project Type: Transmission Line - Maintenance/Modification - Above Ground
Project Description: National Grid is proposing the reconstruction and selective relocation of one 115kV transmission line, the Lockport – Batavia Line 112, from existing Structure 1-2 to existing Structure 211, for a total of approximately 21.7 miles. Existing Line 112 is a 115kV circuit that originates at the Lockport Substation and terminates at the Batavia Substation, extending a distance of approximately 35.0 miles. The Project is located in the City of Lockport, Towns of Lockport and Royalton in Niagara County and Town of Alabama in Genesee County (Frontier and Genesee Regions of National Grid's Western New York Service Territory).

The Project consists of a number of activities on seven (7) Segments of Existing Line 112. The Project proposes to replace the existing single-circuit steel tri-leg "aeromotor" towers with new single-circuit galvanized tubular steel pole structures. Single-circuit suspension structures will be directly embedded into native soils and single-circuit dead-end structures will be set upon foundations. In certain locations, Existing Line 112 shares double-circuit towers with Existing Line 111. In these locations, the existing double-circuit lattice tower structures will be replaced with galvanized tubular steel pole double-circuit structures set upon foundations.

Project work will include tree clearing and brush clearing along the right-of-way.

Segment 1 – Structure 1-2 (Mile 0.1) to Structure 6 (Mile 0.5)
Segment 2 – Structure 6 (Mile 0.5) to Structure 119 (Mile 11.4)
Segment 3 – Structure 119 (Mile 11.4) to Structure 141 (Mile 13.6)
Segment 4 Existing – Structure 141 (Mile 13.6) to Structure 159-1 (Mile 15.8)
Segment 4 Relocated – Structure 141 (Mile 13.6) to Structure 159-1 (Mile 15.8)
Segment 5 – Structure 159-1 (Mile 15.8) to new Structure 173 ½ (Mile 17.2)
Segment 7 – New Structure 184 ½ (Mile 19.1) to Structure 211 (Mile 21.7)

Case # (22-T-0654): CONDITION 24. Prior to filing the EM&CP, the Certificate Holder shall contact the NYSDEC, NYS Natural Heritage Program and the United States Fish and Wildlife Service ("USFWS") to

check for any updates or changes of known threatened or endangered plant or animal species listed in New York, (collectively, “T&E” species) or habitat or Significant Natural Communities in the Project area. After the Certificate Holder learns of any updates regarding T&E species, it will inform DPS Staff of such updates. The Certificate Holder may meet its obligation to inform DPS of such an update by including it in the EM&CP.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.121349229767816,-78.45716788852015,14z

Counties: Genesee and Niagara counties, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Fisher Associates
Name: Faith Page
Address: 180 Charlotte Street
City: Rochester
State: NY
Zip: 14607
Email fpage@fisherassoc.com
Phone: 5853341310

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

Attachment B. Winter Raptor Pre-Construction Survey Plan

Lockport-Batavia Line 112

Rebuild Project

Winter Raptor

Pre-Construction Survey Plan

May 2025

CASE 22-T-0654

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 Introduction

CC Environment is working on behalf of the Niagara Mohawk Corporation d/b/a National Grid (National Grid) to assist with rare, threatened, and endangered species monitoring for the proposed rebuild of a portion of the Lockport-Batavia 112 115kV transmission line (the "Project"). The Project spans approximately 19.7 miles between the City of Lockport, through the Town of Lockport and the Town of Royalton, to the Town of Alabama, New York (the "Project Area").

During the application process, two state-listed raptor species were identified as occupying habitat within the Project Area: short-eared owl (*Asio flammeus*), a state-listed endangered species, and northern harrier (*Circus hudsonius*), a state-listed threatened species. Both are typically seen within the Project Area during their wintering period (November 1 – March 31). In accordance with Certificate Conditions, CC Environment & Planning will conduct pre-construction winter raptor surveys at known winter raptor use areas within the Project Area. These areas include Tonawanda and John White Wildlife Management Areas (WMA), as well as private property in the Towns of Alabama and Royalton. Surveys will be conducted in accordance with the New York State Department of Environmental Conservation's (NYSDEC) Survey Protocol for State-listed Wintering Grassland Raptor Species (August 2021; Attachment A), with slight modifications detailed below.

2.0 Survey Locations

Fourteen stationary survey points have been selected to cover known occupied habitat for short-eared owl and northern harrier. Points #1 - #3 cover the Bulmore Road area that is known to host short-eared owl. Points #4 - #9 cover the grasslands, marshes, and dikes on Tonawanda WMA. Point #10 covers private agricultural fields. Point #11 is located on the Science and Technology Advanced Manufacturing Park (STAMP) in an area known to host these species. Points #12 and #13 cover John White WMA while Point #14 covers private agricultural fields adjacent to John White WMA. Maps of each survey location can be found at the end of this Survey Plan.

3.0 Timing of Surveys

Each point will be surveyed twice in the two weeks preceding any construction activities that will be occurring within the vicinity of the point locations during the winter raptor period (November 1 – March 31). Not all points will be surveyed within the same time period, as construction will move progressively down the line, only impacting a subset of line at a time. Some points may never be surveyed as construction activities will only occur outside of the winter raptor period. After the initial two surveys, surveys will be conducted every two weeks through March 31 in

areas where construction is on-going within occupied habitat. If northern harrier or short-eared owl are detected within the last two weeks of March, surveys will be conducted weekly in April at points where detections occurred until neither species is detected.

4.0 Conducting Surveys

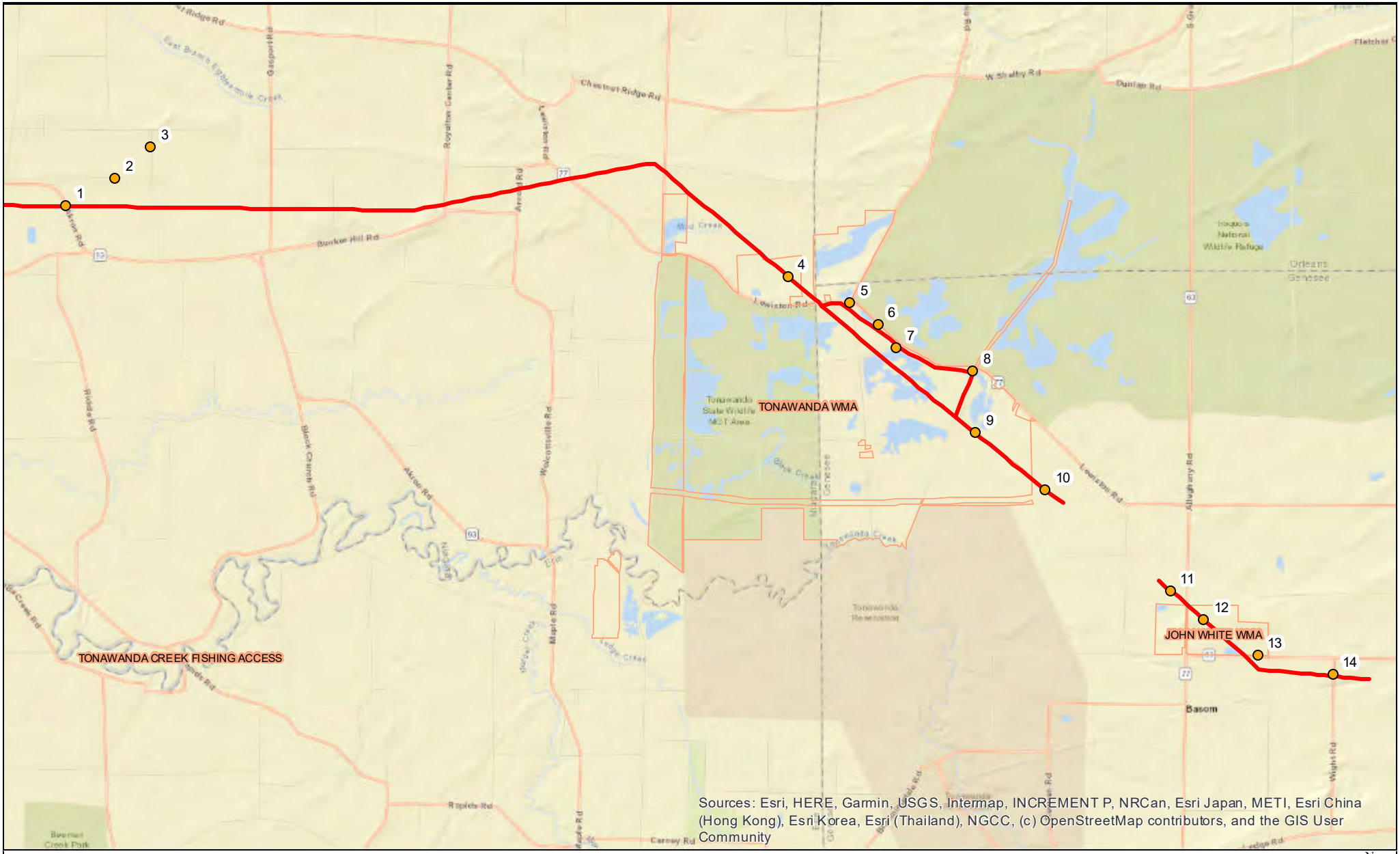
Surveys will be conducted from one hour prior to sunset to 0.5 hours after sunset, for a total survey time of 1.5 hours. Wind speeds must be less than 12 miles per hour and there cannot be sustained rain, snow, or heavy fog.

Both binoculars and spotting scopes will be used by trained observers. All raptors seen, and their behavior, will be recorded on the datasheet provided by NYSDEC (Attachment A) and locations will be documented on accompanying aerial photographs. Details such as flight paths, roosts, and perching locations will be clearly noted on maps. For species such as northern harrier that may be observed foraging over a larger area, a polygon on the map will be used to outline the area used. Any raptors seen within the vicinity of the work areas while observers are traveling to and from survey locations will also be documented.

5.0 Reporting Surveys

Any northern harriers or short-eared owls documented during surveys will be reported to NYSDEC within 24 hours. A summary report, including copies of all datasheets and maps, will be submitted to NYSDEC three business days prior to the start of construction activities within any occupied habitat. Multiple reports may be submitted during the winter raptor season as construction progresses, triggering the need for shifts in survey locations.

FIGURES



Winter Raptor Survey Locations

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points

NG Lockport Batavia 112 Line

NYSDEC Lands

Figure 1

0 0.1 0.2 0.4 Miles

N

Winter Raptor Survey Points 1, 2, & 3

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 2

0 0.05 0.1 0.2 Miles

N

Winter Raptor Survey Point 4

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 3

0 0.075 0.15 0.3 Miles

N

Winter Raptor Survey Points 5, 6, & 7

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 4

0 0.05 0.1 0.2 Miles

N

Winter Raptor Survey Point 8

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 5

0 0.05 0.1 0.2 Miles

N

Winter Raptor Survey Point 9

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 6

0 0.075 0.15 0.3 Miles

N

Winter Raptor Survey Point 10

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 7

0 0.05 0.1 0.2 Miles

N

Winter Raptor Survey Point 11

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 8

0 0.1 0.2 0.4 Miles

N

Winter Raptor Survey Points 12 & 13

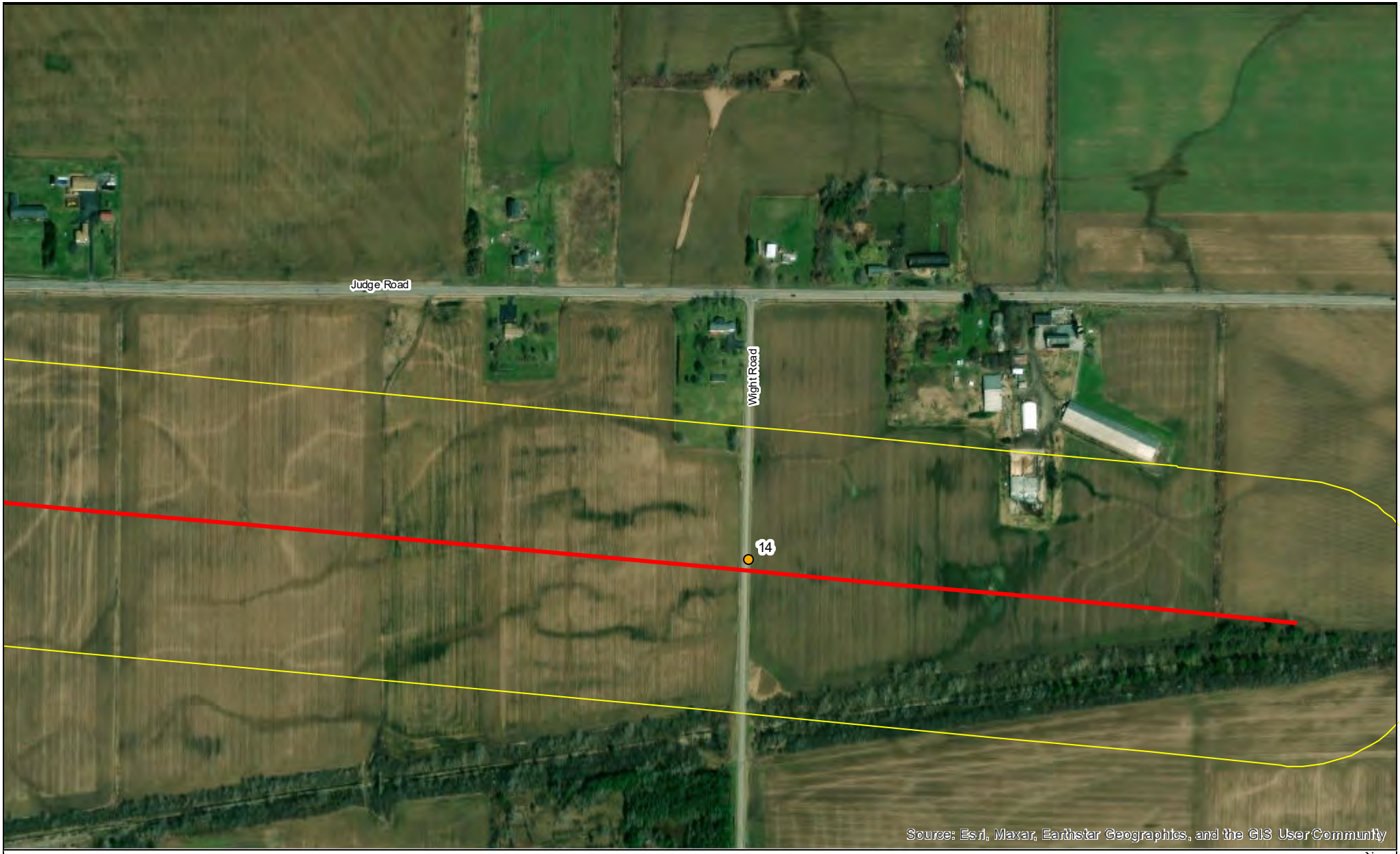
National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 9



0 0.05 0.1 0.2 Miles

N

Winter Raptor Survey Point 14

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Winter Raptor Survey Points
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Observer:_____ Date:_____

Figure 10

Attachment A. New York State Department of Environmental Conservation's Survey Protocol for State-listed Wintering Grassland Raptor Species

New York State Department of Environmental Conservation
Survey Protocol for State-listed Wintering Grassland Raptor Species
August 2021

These protocols describe requirements for determining presence and site use by New York State-listed threatened and endangered (T&E) grassland raptor species during the winter season as part of the New York State Department of Environmental Conservation (NYSDEC) permit review process for a project application. These protocols specifically target the New York State-listed Short-eared Owl (*Asio flammeus*) (Endangered) and Northern Harrier (*Circus hudsonius*) (Threatened). These surveys have two primary purposes: (1) documenting the presence of the target species, and (2) recording particular areas used by the target species, such as roost sites or foraging areas, within a project area. This protocol is not intended to confirm absence of birds from a site. Information obtained from these surveys will be considered in determining the possible need for additional comprehensive studies (e.g., using radio-telemetry and/or night-vision optics), regulatory review and, if necessary, avoidance, minimization, and/or mitigation strategies pursuant to 6 New York Codes, Rules and Regulations (NYCRR) Part 182.

A detailed, site specific work plan, including survey schedule and GIS shapefiles (.shp) of a proposed project boundary, stationary survey locations, driving route stops, and estimated areas of ground visible within 1,000 meters of each stationary survey point must be developed and submitted to NYSDEC for review and written approval at least one month prior to the start of field work. NYSDEC recommends these materials be submitted at the earliest they are available prior to the one month before survey deadline. Multiple projects may be under review concurrently and earlier submission facilitates adequate time for NYSDEC to review the work plan and provide feedback. Failure to submit materials in a timely manner may result in delays in project reviews.

Target Species

Both Short-eared Owls and Northern Harriers typically roost on the ground, though Short-eared Owls may roost in conifers or thick hedgerows when snow becomes deeper than approximately 6 inches. At times, these two species may roost in close proximity to one another and Northern Harriers may be observed dropping to the ground at their nighttime roost just before dark at the same time that Short-eared Owls are leaving their daytime roost to begin foraging for the evening. The period surrounding sunset is particularly critical for the identification of likely roost locations and estimating the number of individuals using them.

Short-eared Owls are crepuscular and nocturnal hunters and while they may occasionally be active in the late afternoon, winter surveys conducted throughout New York State from 2008-2021 indicate that they often do not leave their daytime roost to begin hunting until sunset or later, and sometimes just 5 - 10 minutes before full dark. Northern Harriers are diurnal and crepuscular raptors and may be seen hunting throughout the day, but they are most active in the morning and late afternoon right up until sunset when they can be observed landing at their nighttime roost site.

Survey Periods

November 15 through March 31 is the primary period during which Short-eared Owl and Northern Harrier often occur at winter concentration areas in New York, and surveys must be conducted during this season. Conduct surveys approximately weekly at each stationary point in the study area (hereafter, a "survey period"). At a minimum, conduct two survey periods in November (survey periods 1 and 2), and four survey periods each in December (survey periods 3-6), January (survey periods 7-10), February (survey periods 11-14) and March (survey periods 15-18), for a total of eighteen survey periods during the course of the winter season. Additional surveys are required in April if Short-eared Owl and/or Northern Harrier are present at the project site during the last two weeks of March (survey periods 17 or 18). If either species is documented during surveys in early April, applicants should discuss with NYSDEC the possible need for early breeding season surveys.

Stationary Evening Surveys

The primary survey method for wintering Short-eared Owl and Northern Harrier is a regimented series of evening visual scans and observations with binoculars and a spotting scope from one or more stationary points or "stations" within a project area. Conduct surveys from at least one hour before sunset until it is too dark to observe flying birds (at least one-half hour, or up to one hour after sunset). On many nights, especially those with clear, moonlit skies, and on days with complete snow cover, birds are frequently seen well before or after the official time of sunset. Therefore, the entire length of the survey must be at least 1.5 hours, but on some evenings could be as long as 2.5 hours or more, depending on the start time, environmental conditions and bird activity.

The total number of stations required depends on the size of the project area, the amount of open habitat within the project area, and the visibility of that habitat from survey station(s). "Open habitat" and "field" refer to all fields, including those in pasture, row crop, hay, alfalfa, or other field crop the previous growing season; grasslands; fallow fields; early successional fields or shrubland with sparce woody growth; and wet meadows or marsh land. Position survey stations in or near open habitat at vantage points with clear visibility in all directions, or most directions if stations are from roadside locations or edges of fields. Make observations from within or next to a blind if the station is away from the roadside and within a field. When the station is at the edge of the habitat, the observer(s) should be backed up to a hedgerow or other background feature at the edge of the field, or within or next to a vehicle.

Survey stations must not be more than 1,000 meters apart within open habitat, and the total number of stations must allow for full visual coverage of all open habitats at ground level within the entire project site. When visibility is obstructed (e.g., by hills, vegetation, infrastructure, etc.), survey stations must be sited less than 1,000 meters apart and close enough to allow for the accurate detection and identification of the target species in all

open habitats. Any ground-level portion of the 1,000-meter viewshed that is not visible from a survey station must be clearly noted.

Include some stationary points within or adjacent to the project area to cover areas not intended for development. Data on bird use of such areas provide information on potential siting options that may avoid or minimize impacts to T&E species, and areas that could serve as mitigation parcels (if needed), and/or be used as reference areas for post-construction monitoring.

Daytime Driving Routes

Daytime driving routes are an additional survey method that may be utilized for detecting foraging areas of Northern Harrier and other diurnal raptors. **Driving routes are not suitable for detecting Short-eared Owls or roosting Northern Harriers.** Due to the short time period during which Short-eared Owls are active and visible before dark, driving surveys are considered a supplemental effort, and **cannot** replace a full stationary evening survey effort or be the sole survey method at a project site.

These surveys consist of driving between a series of roadside stops adjacent to open habitat and conducting 5-10 minute observations at each stationary, roadside stop. The driving route for a site should be surveyed weekly, and include <u>all</u> roads within the project site from which open habitat can be easily viewed. Driving route surveys may take place at any time during daylight hours, and can be done on the same days as stationary surveys. The total number and distribution of roadside stops are based on the length and distribution of roads in the project area, and what areas are visible from the roadside. Stops located approximately a half mile apart will typically allow for sufficient coverage, however, the distance between stops may need to be shorter, depending on obstructions of ground-level views at the site.

The overall survey effort should be focused on ensuring maximum spatial coverage is achieved by siting evening stationary surveys across the entire site, with driving routes serving to gather supplemental information on daytime use of the area by Northern Harriers. If resources are limited, focus should be placed on conducting stationary surveys, even if at the expense of driving surveys.

Conducting Surveys

Surveys should not be conducted during inclement weather, including precipitation, fog, or moderate to strong winds (i.e., wind greater than 10-12 mph, or Beaufort Scale 3). Due to survey time constraints, an observer can only cover one stationary point per evening. Multiple observers surveying concurrently at different stations and/or multiple evenings are needed to sufficiently cover most project sites for a given week (stationary survey period). Repeated trips on additional evenings may be necessary to adequately confirm species presence and document foraging and roost areas. Both Northern Harriers and Short-eared Owls may fly considerable distances from roost sites to foraging areas.

Appropriately stationing observers on subsequent nights farther out along these flight paths may be necessary to identify important foraging areas.

For both stationary evening surveys and driving route stops, scan the available open habitat throughout the course of the survey period. Pay particular attention to birds perching on fence posts, utility poles, and hay bales, coursing low over the ground, or perching on the ground. Observers should also listen for the bark-like call of the Short-eared Owl and rapid series of *kek* calls of the Northern Harrier.

While one observer may be sufficient for conducting stationary surveys at a given station, two observers are recommended during driving routes. At each stop, the observer(s) should get out of the vehicle and scan the surrounding open habitat in all directions for the observation period. If a raptor is observed while driving between stops, record the observation location and data upon reaching the next survey point.

Recording Data

For each survey, record the following data: date; observer(s) name(s); site name; point number; point location (coordinates); start and end time of observation at that point; survey period; whether stationary point or driving stop; and weather information, including temperature, wind speed and direction, precipitation, snow depth, and cloud cover. During each driving stop and stationary survey, record the following: species identification; number of individuals per species (actual number or > 20 if large numbers); individual behavior (perching, foraging, interacting with other birds, high flyover, coming/going from suspected roost, etc. See below.); time each raptor is first observed; time each raptor is last observed; and the location of target species relative to observer. Record Northern Harriers as male or female/juvenile, if possible.

Document all observations of raptors and identify individuals to species. When species identification is uncertain, record "unidentified raptor", although "unidentified buteo", "unidentified eagle" or "unidentified accipiter" is preferable when possible. Where raptors fly into or out of an area of visibility, indicate direction and height of flight on the maps. Show clearly on maps any suspected or confirmed foraging and roost areas, as defined below. For every individual Short-eared Owl and Northern Harrier detected in the project area, including those detected outside of regular survey times or locations (i.e. incidental observations), record the date, time, age/sex if possible, and behavior observed, and map on aerial photographs perch locations, potential or confirmed roost locations, foraging areas, flight paths, and flight height.

Specific behaviors to note for Short-eared Owl and Northern Harrier include:

- foraging (defined as hovering, flying low over vegetation, flying over fields in a back and forth or circular pattern at any height, or dropping to or toward the ground in an attempt to capture prey, at least once during the observation period);
- perching (on the ground or on elevated perches such as fence posts, utility poles, hay bales, tree branches);

- fly-through (i.e., straight-line, direct high flight such as when relocating between roosting and foraging areas, with no indication of foraging behavior or interacting with other individuals);
- interacting with other individuals (e.g., chasing, displacing, displaying, counter-calling, food exchange, etc.); and
- roosting (see below).

Document suspected roost areas when one or more Short-eared Owls are observed perched during the day, or arising from the ground, hedgerows, or conifers in the evening and then beginning flying and foraging activities or immediately departing the area; or where one or more Northern Harriers are active in an area near dusk and are then observed dropping to the ground, hedgerow, or other low feature, but not coming back up as it gets dark, or otherwise not seen again. Concentrated activity of either or both species in an area at or near dusk and interactions between Short-eared Owls and Northern Harriers are also indicators of a likely roost nearby. Late winter surveys (March and April) should specifically document any breeding behavior observed, with the "highest" behavior code recorded (for descriptions of breeding codes, see: https://ebird.org/atlasny/about/breeding-codes).

Record observations of other species seen or heard during all surveys, as well as incidentally while in the project area (i.e., outside of the survey period or in areas not targeted for survey), on data sheets. Other species of interest include all state-listed T&E and special concern species; all raptors (owls, hawks, falcons, eagles, osprey); shrikes; and arctic-breeding songbirds such as snow buntings, larkspurs, and pipits.

NYSDEC recommends that all data collected be entered into eBird, and for data collected prior to January 1, 2025, entered into eBird under the New York State Breeding Bird Atlas portal. For more information, see: https://ebird.org/atlasny/about/

Reporting Requirements

A detailed, site specific work plan, including survey schedule and GIS shapefiles (.shp) of a proposed project boundary, stationary survey locations, driving route stops, and estimated areas of ground visible within 1,000 meters of each stationary survey point must be developed and submitted to NYSDEC for review and written approval at least one month prior to the start of field work. A final report must be submitted to NYSDEC as soon as possible after the conclusion of each survey season. Final reports must minimally include the following:

- the overall survey period, and dates, times, and durations of surveys conducted at each stationary point and driving stop;
- description of habitat surrounding each point, noting any changes during the survey period;
- number of species observed overall;
- total number of individuals of each species observed at each point, overall and by date;

- summaries of the number and behavior of birds seen, and whether any Short-eared Owl or Northern Harrier roosts were observed or suspected;
- for all T&E species, whether any behaviors designated as "probable" or "confirmed" breeding were observed, following Breeding Bird Atlas codes;
- a list or table of all species with all dates and points where they were observed;
- the point(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
- a description of weather conditions during and immediately prior to survey days;
- a description of any disruptions and/or distractions that occurred during each survey that may have precluded an adequate survey;
- a detailed discussion of all methods and results;
- one or more maps, as needed, which display all observations of all individuals of T&E and SC species, and any other species targeted at the site, indicating observation date and behavior code;
- photographs of the habitat taken from survey points;
- copies of all data sheets, as a separate appendix or attachment to the report; and
- viewshed analysis from each survey point that clearly defines what areas of ground were visible within 1,000 meters, and which areas were obstructed from view (e.g., due to vegetation, topography, infrastructure, or other obstructions).

For all individuals of T&E species documented while in the project area, clearly show on the map(s), or otherwise make available in the report detailed information on the location, method of detection, behavior, flight paths, foraging areas, and all other relevant data. Along with the report, provide GIS shapefiles (.shp) depicting the survey point locations, polygons showing all visible open habitat at ground level within 1,000 meters of each point, and date, time, location, flight paths, flight height and behavior of each individual T&E species documented on site.

Also include in the report a discussion and conclusion regarding whether more comprehensive studies may be necessary to adequately assess the potential for the project to negatively affect endangered or threatened winter raptor species.

New York State Department of Environmental Conservation

Wintering Raptor Stationary Survey Data Sheet

Observer: _____ Date: _____

Site Name: County:

Time Start: _____ Time End: _____

Assigned Survey Location: _____

_____

_____

_____

Total SEOW: _____

Total NOHA: _____

Additional observations (such as horned larks, snow buntings, etc.) _____

Weather

Wind Speed: _____

Direction: _____

Temperature: _____

% Cloud cover: _____

Snow Depth: _____ inches

Snow Crust: *Yes* *No*

Precipitation: (*circle one*)

Snow *Rain* *None*

Visibility: (*circle one*)

Good *Fair* *Poor*

Reason: _____

(i.e. fog, no moon, snow etc.)

Mark the observation location and location of each owl and hawk observed with a unique identification number on the aerial site map and below on this datasheet. See additional instructions on Survey Guidelines sheet.

Owl/Hawk Species *Enter one bird per line. For harriers, note sex/ age*	**Bird ID#** *As referenced on aerial map*	**First Time Bird Seen**	**Last Time Bird Seen**	**Activity Observed** *Perched, foraging, flyover (note height), feeding, going to likely roost, leaving probable roost, interacting with other birds, etc.*	**Notes** *Include amount of time bird spent at site. If it left site, note flight direction. Note whether bird was seen or heard, approximate distance, if prey capture attempts successful, other behaviors*

Wintering Raptor Stationary Survey Data Sheet – Page 2

Date_____ Site Name_____ Observer _____

Owl/Hawk Species *Enter one bird per line. For harriers, note sex/ age*	**Bird ID#** *As referenced on aerial map*	**First Time Bird Seen**	**Last Time Bird Seen**	**Activity Observed** *Perched, foraging, fly over (note height), feeding, going to likely roost, leaving probable roost, interacting with other birds, etc.*	**Notes** *Include amount of time bird spent at site. If it left site, note flight direction. Note whether bird was seen or heard, approximate distance, if prey capture attempts successful, other behaviors*

Attachment C. Breeding Marsh Bird Pre-Construction Survey Plan

Lockport-Batavia Line 112
Rebuild Project

Breeding Marsh Bird
Pre-Construction Survey Plan

May 2025 CASE 22-T-0654

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 Introduction

CC Environment is working on behalf of the Niagara Mohawk Corporation d/b/a National Grid (National Grid) to assist with rare, threatened, and endangered species monitoring for the proposed rebuild of a portion of the Lockport-Batavia 112 115kV transmission line (the "Project"). The Project spans approximately 19.7 miles between the City of Lockport, through the Town of Lockport and the Town of Royalton, to the Town of Alabama, New York (the "Project Area").

During the application process, five state-listed bird species were identified as potentially occurring within or adjacent to marshes along the Project Area during the breeding season: black tern (*Chlidonias niger*), least bittern (*Botaurus exilis*), pied-billed grebe (*Podilymbus podiceps*), king rail (*Rallus elegans*), and northern harrier (*Circus hudsonius*). These marshes lie within the Tonawanda Wildlife Management Area (WMA). Also noted within these marshes are the ruddy duck (*Oxyura jamaicensis*), a state rare species. In accordance with Certificate Conditions, CC Environment & Planning will conduct pre-construction breeding marsh bird surveys along the Project Area within Tonawanda WMA. Surveys will be conducted following the Standardized North American Marsh Bird Monitoring Protocol (Conway 2009[1]), with slight modifications detailed below.

2.0 Survey Locations

Nineteen stationary survey points have been selected to cover all marsh habitat along the Project within Tonawanda WMA. Points were purposely located at or near powerline structures, as this is where disturbance during construction will be the greatest as most work will be occurring in these locations. Maps of each survey location can be found in at the end of this Survey Plan.

3.0 Target Species

There will be two target species categories for these surveys: those that require the use of broadcast calls and those that don't. Due to the secretive nature of many marsh bird species, detection in dense emergent vegetation can be difficult without broadcasting pre-recorded calls. Species for which calls will be broadcast will be least bittern, sora, Virigina rail, king rail, American bittern, and pied-billed grebe. Other focal species that do not require playback are black tern, northern harrier, ruddy duck, and prothonotary warbler. Other marsh-dependent bird species will also be noted during surveys.

[1] Conway, C. J. 2009. Standardized North American Marsh Bird Monitoring Protocols, version 2009-2. Wildlife Research Report #2009-02. U.S. Geological Survey, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.

4.0 Timing of Surveys

Three surveys will be conducted at each point in the breeding season prior to construction. One survey will be completed in each of the survey windows: May 1 – May 14, May 15 – May 31, June 1 – June 15. Each survey will be at least ten days apart. If construction must occur within or adjacent to marshes during the breeding season, points within the vicinity of the construction activity will be surveyed twice within the two weeks preceding any construction occurring.

5.0 Conducting Surveys

Surveys will be conducted from one half hour prior to sunrise until no later than three hours after sunrise. Wind speeds must be less than 12 miles per hour and there cannot be sustained rain or heavy fog.

The survey will consist of two parts, an initial five minutes of silence in which the trained observer will record all marsh birds visually or audibly observed on the datasheet (Attachment A) then the call broadcast will begin. The protocol's standardized call files and sequence will be used, which includes 30 seconds of calls by a focal species followed by 30 seconds of silence before moving on to the next focal species, with the exception of least bittern. As this species has been shown to take longer to respond to broadcast calls, the call portion of the survey will start with 3 minutes of least bittern calls (3 rounds of alternating 30 seconds of calls and 30 seconds of silence) before moving on to the next species. The speaker will be placed on the ground, facing toward the center of the marsh, with the observer standing approximately 2 meters to the side of the speaker. Surveys at a point conclude after the 30 seconds of silence that follows the last broadcasted call (the speaker will say "Stop"). Any focal marsh birds observed while traveling between points will also be recorded.

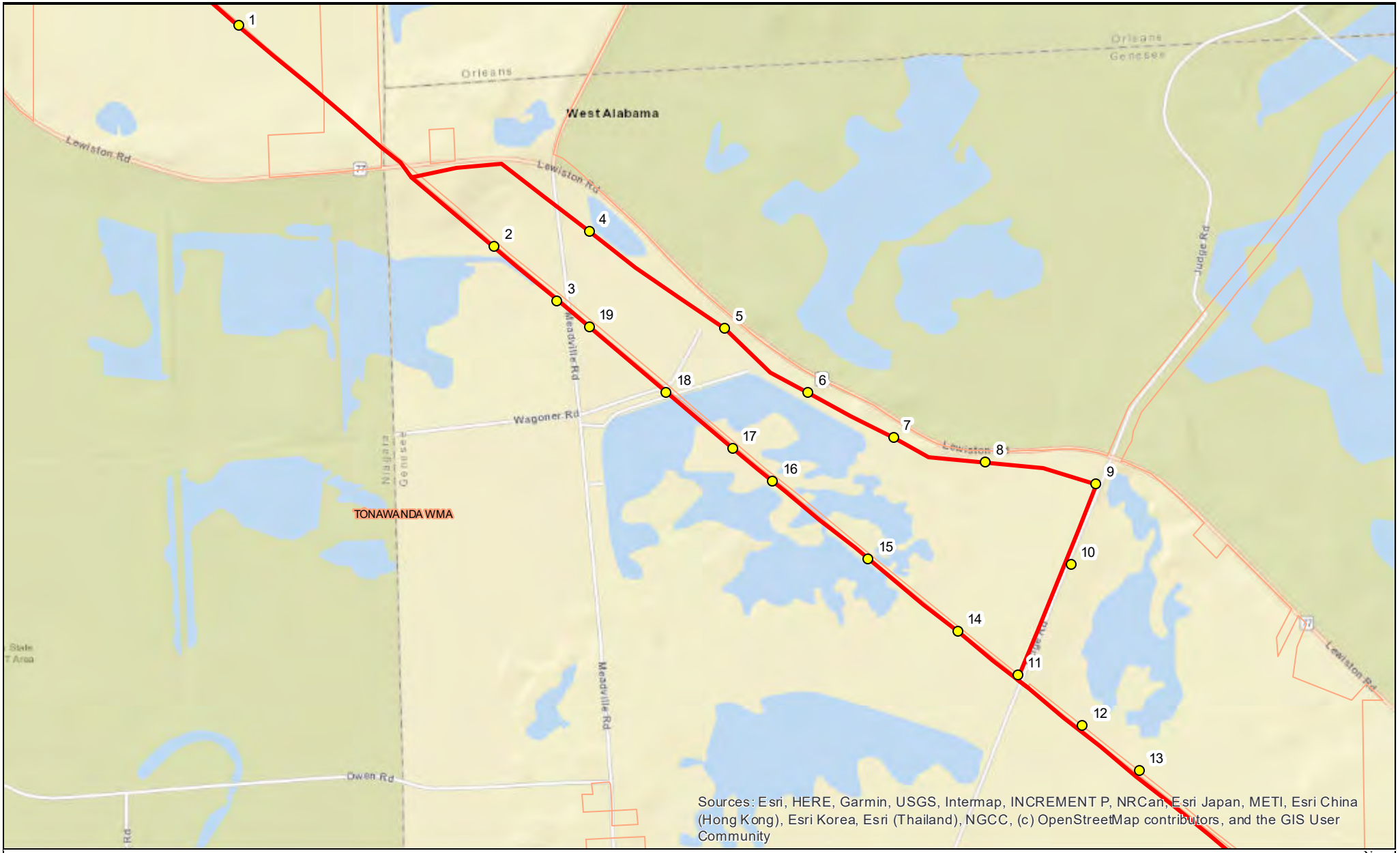
All species for which a call is broadcast, along with northern harrier, will be recorded individually on the datasheet so that one line represents a single individual. All other marsh bird species will be recorded such that a single line represents the tally of all individuals of that species detected during the survey time, separated by three distance categories: $\leq$50m, 51-100m, >100m. For example, one line will tally all black terns seen within 50m of the survey point while a second line will tally all black terns 51-100m from the survey point.

In addition to the data sheet, any individual threatened and endangered species will be marked on an aerial map. If birds are only heard and not seen, locations will be estimated based on direction and call volume. Details such as flight paths, roosts, perching locations, and nests will be clearly noted on maps. For species such as black tern that may be observed foraging over a larger area, a polygon on the map will be used to outline the area used.

6.0 Reporting Surveys

Any threatened or endangered species documented during surveys will be reported to NYSDEC within 24 hours. A summary report, including copies of all datasheets, will be submitted to NYSDEC within two weeks after the conclusion of the final survey. If surveys are conducted within the two weeks prior to the start of construction, a summary report will be submitted at least three business days prior to the start of construction activities.

FIGURES



Breeding Marsh Bird Survey Locations

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/14/2025

Breeding Marsh Bird Survey Points

NG Lockport Batavia 112 Line

NYSDEC Lands

Figure 1

0 0.075 0.15 0.3 Miles

N

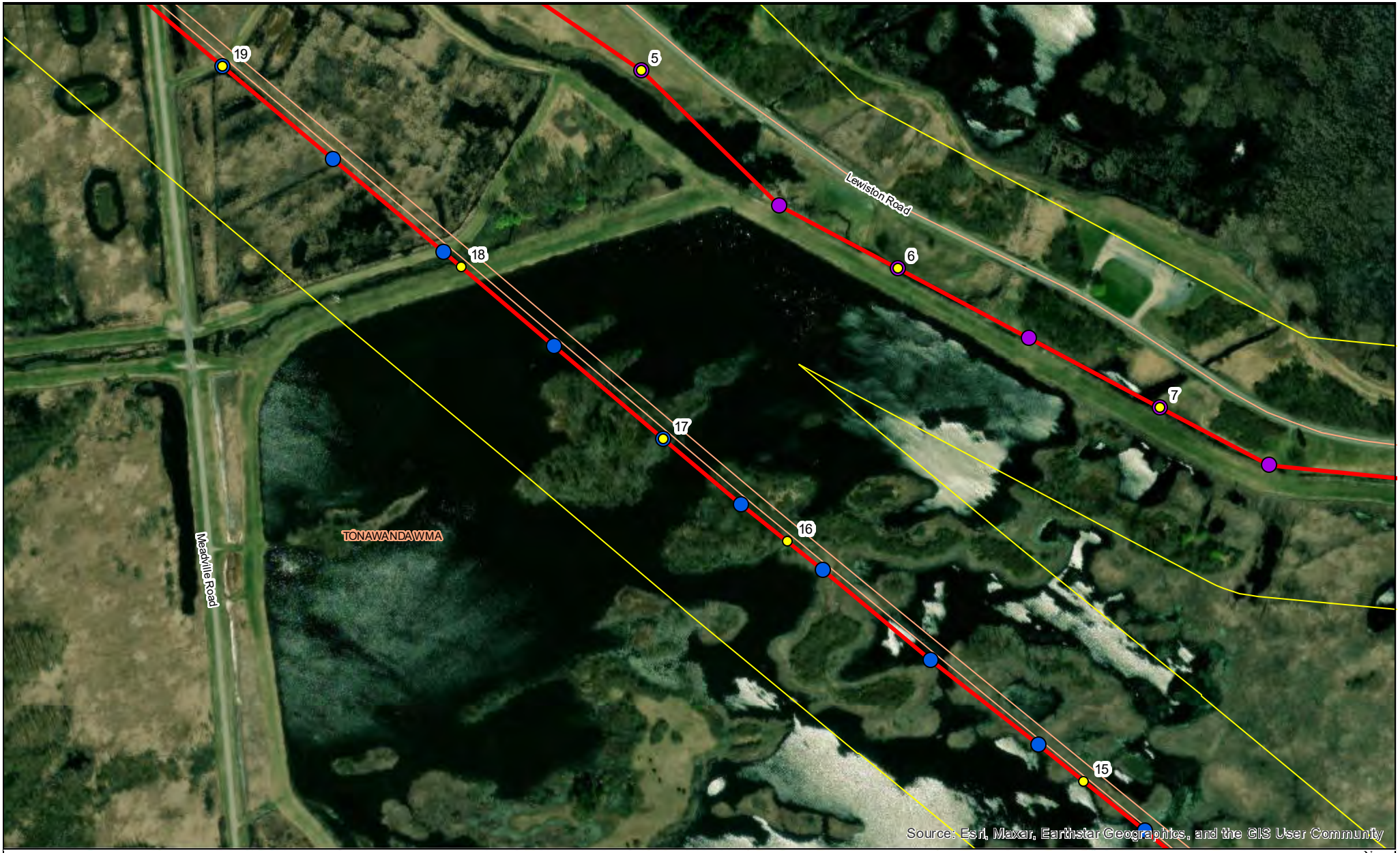
Breeding Marsh Bird Survey Points 1 - 4

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/14/2025

- Breeding Marsh Bird Survey Points
- Existing Structures
- New Structures
- NG Lockport Batavia 112 Line
- 500ft Buffer
- NYSDEC Lands

Figure 2



0 0.075 0.15 0.3 Miles

N

Breeding Marsh Bird Survey Points 5 - 7 & 15 - 19

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/14/2025

- Breeding Marsh Bird Survey Points
- Existing Structures
- New Structures
- NG Lockport Batavia 112 Line
- 500ft Buffer
- NYSDEC Lands

Figure 3

0 0.1 0.2 0.4 Miles

N

Breeding Marsh Bird Survey Points 8 - 16

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/14/2025

- Breeding Marsh Bird Survey Points
- Existing Structures
- New Structures
- NG Lockport Batavia 112 Line
- 500ft Buffer
- NYSDEC Lands

Figure 4

Attachment A. National Marsh Bird Monitoring Program Survey Data Sheet

National Marsh Bird Monitoring Program Survey Data Sheet

Date *(eg 10-May-04)* **:**

Name of marsh or route :

Observer(s) *(list all)** **:**

Multiple Observer Survey: Y / N

Boat type:

High tide time:

Water depth:

location: location: location:

depth: depth: depth:

List all non-focal species surveyed:

**list all observers in order of their contribution to the data collected*

put an "S" in the appropriate column if the bird was seen, a "1" if the bird was heard, and "1S" if both heard and seen

Station#	Start Time (military)	Temp (C or F *circle one*)	Sky	Wind (Beaufort)	Salinity	Background noise	Species	**Responded During**												Call Type(s)	Direction	In target area	Distance (meters)	Distance Aide	Detected at a Previous Point	Comments
								Pass 0-1	Pass 1-2	Pass 2-3	Pass 3-4	Pass 4-5	LEBI	SORA	VIRA	KIRA	AMBI	PBGR	Outside survey period							

Background noise: 0 *no noise* 1 *faint noise* 2 *moderate noise (probably can't hear some birds beyond 100m)* 3 *loud noise (probably can't hear some birds beyond 50m)* 4 *intense noise (probably can't hear some birds beyond 25m)*

Beaufort scale: 0 *smoke rises vertically* 1 *wind direction shown by smoke drift* 2 *wind felt on face; leaves rustle* 3 *leaves , small twigs in constan motion; light flag extended* 4 *raises dust and loose paper; small branches are moved* 5 *small trees with leaves sway; crested wavelets on inland waters*

Sky: 0 *clear or a few clouds* 1 *partly cloud or variable sky* 2 *cloudy or overcast* 4 *fog or smoke* 5 *drizzle* 6 *snow* 8 *showers*

Distance Aide: 0 *none* 1 *range finder* 2 *distance bands on aerial photo* 3 *surveyor flags tied to vegetation*

National Marsh Bird Monitoring Program Survey Data Sheet

Pg___of____

Date *(eg 10-May-04)* **:** **Name of marsh or route :** **Observer(s)** *(list all)** **:**

**list all observers in order of their contribution to the data collected*

put an "S" in the appropriate column if the bird was seen, a "1" if the bird was heard, and "1S" if both heard and seen

								Responded During																		
Station#	Start Time (military)	Temp (F)	Sky	Wind (Beaufort)	Salinity	Background noise	Species	Pass 0-1	Pass 1-2	Pass 2-3	Pass 3-4	Pass 4-5	LEBI	SORA	VIRA	KIRA	AMBI	PBGR	Outside survey period	Call Type(s)	Direction	In target area	Distance (meters)	Distance Aide	Detected at a Previous Point	Comments

Background noise: 0 *no noise* 1 *faint noise* 2 *moderate noise (probably can't hear some birds beyond 100m)* 3 *loud noise (probably can't hear some birds beyond 50m)* 4 *intense noise (probably can't hear some birds beyond 25m)*

Beaufort scale: 0 *smoke rises vertically* 1 *wind direction shown by smoke drift* 2 *wind felt on face; leaves rustle* 3 *leaves , small twigs in constan motion; light flag extended* 4 *raises dust and loose paper; small branches are moved* 5 *small trees with leaves sway; crested wavelets on inland waters*

Sky: 0 *clear or a few clouds* 1 *partly cloud or variable sky* 2 *cloudy or overcast* 4 *fog or smoke* 5 *drizzle* 6 *snow* 8 *showers*

Distance Aide: 0 *none* 1 *range finder* 2 *distance bands on aerial photo* 3 *surveyor flags tied to vegetation*

Attachment D. Breeding Grassland Bird Pre-Construction Survey Plan

Lockport-Batavia Line 112
Rebuild Project

Breeding Grassland Bird
Pre-Construction Survey Plan

May 2025 CASE 22-T-0654

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 Introduction

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During the application process, three state-listed threatened grassland bird species were identified as potentially occurring within or adjacent to the Project Area during the breeding season: sedge wren (*Cistothorus stellaris*), northern harrier (*Circus hudsonius*), and Henslow's sparrow (*Centronyx henslowii*). Tonawanda WMA and John White WMA also host several NYS species of special concern and species of greatest concern within their grasslands. In accordance with Certificate Conditions, CC Environment & Planning will conduct pre-construction breeding grassland bird surveys along the Project Area within the two WMAs and within suitable habitat within the adjacent Science and Technology Advanced Manufacturing Park (STAMP). Surveys will be conducted in accordance with the New York State Department of Environmental Conservation's (NYSDEC) Survey Protocol for State-listed Breeding Grassland Bird Species (August 2021; Attachment A), with slight modifications detailed below.

2.0 Survey Locations

Thirteen stationary survey points have been selected to cover all grassland habitat along the Project within Tonawanda and John White WMAs and STAMP. Points 1 – 3 are within Tonawanda WMA, Points 4 – 6 are on STAMP property, and Points 7 – 13 are within John White WMA. Points were purposely located at or near powerline structures, as this is where disturbance during construction will be the greatest as most work will be occurring in these locations. Maps of each survey location can be found at the end of this Survey Plan.

3.0 Timing of Surveys

In accordance with the NYSDEC protocol, all survey points will be surveyed by trained observers between May 15 and July 20 in the breeding season prior to construction. Surveys will be conducted weekly for a total of eight surveys per point (approximately seven days will pass between surveys). If construction must occur within grasslands during the breeding season, points within the vicinity of the construction activity will be surveyed twice within the two weeks preceding any construction occurring.

4.0 Conducting Surveys

Surveys will be conducted from one half hour prior to sunrise until no later than 10:30am. Wind speeds must be less than 12 miles per hour and there cannot be sustained rain or heavy fog.

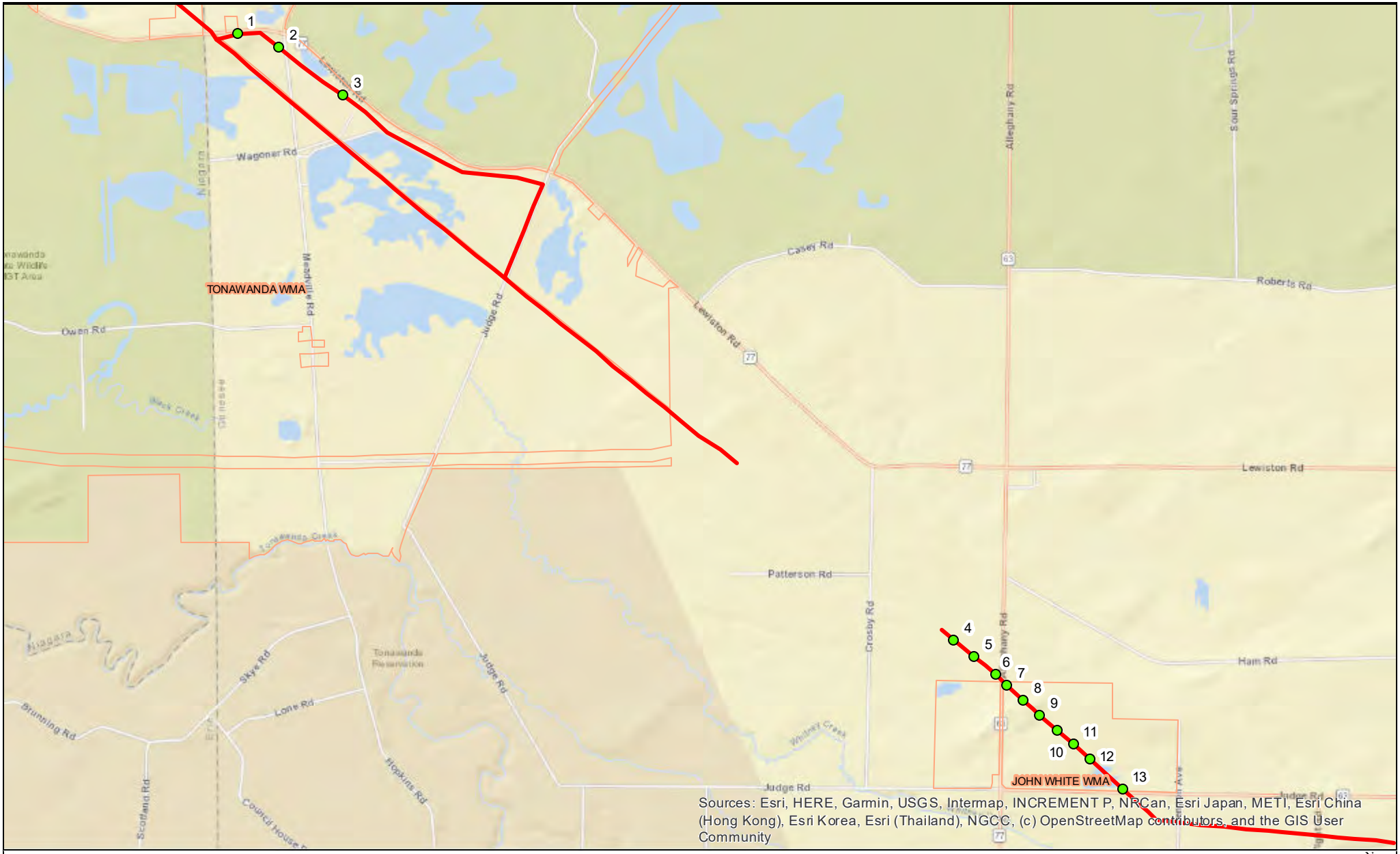
The order in which points are surveyed will be reversed during each survey period. Observers will wait at least two minutes after arriving at the point to begin surveying. The five-minute survey will then begin, with observers recording all grassland birds visually or audibly observed on the datasheet provided by NYSDEC (Attachment A). Any grassland birds observed while traveling between points will also be recorded.

In addition to the data sheet, any individual threatened and endangered species will be marked on an aerial map. If birds are only heard and not seen, locations will be estimated based on direction and call volume. Details such as flight paths, roosts, perching locations, and nests will be clearly noted on maps. For species such as northern harrier that may be observed foraging over a larger area, a polygon on the map will be used to outline the area used.

5.0 Reporting Surveys

Any threatened or endangered species documented during surveys will be reported to NYSDEC within 24 hours. A summary report, including copies of all datasheets, will be submitted to NYSDEC within two weeks after the conclusion of the final survey. If surveys are conducted within the two weeks prior to the start of construction, a summary report will be submitted at least three business days prior to the start of construction activities.

FIGURES



Breeding Grassland Bird Survey Locations

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Breeding Grassland Bird Survey Points

NG Lockport Batavia 112 Line

NYSDEC Lands

Figure 1

Breeding Grassland Bird Survey Points 1, 2, & 3

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

- Breeding Grassland Bird Survey Points
- NG Lockport Batavia 112 Line
- New Structures
- 500ft Buffer
- Existing Structures
- NYSDEC Lands

Figure 2

0 0.05 0.1 0.2 Miles

N

Breeding Grassland Bird Survey Points 4 - 8

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/14/2025

Breeding Grassland Bird Survey Points
Existing Structures
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Figure 3

0 0.05 0.1 0.2 Miles

N

Breeding Grassland Bird Survey Points 9 - 13

National Grid
Lockport-Batavia Line 112 Rebuild Project
Town of Alabama, Genesee County, New York

K. Hojnacki, Date: 5/21/2025

Breeding Grassland Bird Survey Points
Existing Structures
NG Lockport Batavia 112 Line
500ft Buffer
NYSDEC Lands

Figure 4

Attachment A. New York State Department of Environmental Conservation's Survey Protocol for State-listed Breeding Grassland Bird Species

New York State Department of Environmental Conservation
Survey Protocol for State-listed Breeding Grassland Bird Species
2021

These protocols describe requirements for determining presence and site use by New York State-listed threatened and endangered grassland bird species during the breeding season as part of the New York State Department of Environmental Conservation (NYSDEC) permit review process for a project application. Threatened and endangered (T&E) and special concern (SC) grassland nesting birds in New York State include: Short-eared Owl (E), Northern Harrier (T), Upland Sandpiper (T), Henslow's Sparrow (T), Sedge Wren (T), Grasshopper Sparrow (SC), Vesper Sparrow (SC), and Horned Lark (SC). Information obtained from these surveys will be considered in determining the possible need for additional comprehensive studies, regulatory review and, if necessary, avoidance, minimization, and/or mitigation strategies pursuant to 6 New York Codes, Rules and Regulations (NYCRR) Part 182.

Survey Periods

Surveys must be conducted during the breeding season from May 15 through July 20. These survey protocols are geared toward the **optimal** window for surveys for most T&E and SC grassland bird species that might occur in New York. Surveys will occur approximately weekly at each point in the study area (hereafter, a "survey period"). At a minimum, there will be two survey periods in May (survey periods 1 and 2), four survey periods in June (survey periods 3 through 6), and two survey periods in July (survey periods 7 and 8), for a total of eight survey periods during the course of the breeding season. At least four survey periods must be completed before any haying or mowing is done at the site. Additional surveys may be required in April or early to mid-May if breeding Short-eared Owl, Northern Harrier, or Upland Sandpiper are to be targeted. Additional evening surveys may be required in June and July if Henslow's Sparrow is to be targeted. NYSDEC may recommend modifications to these dates and times based on site-specific information regarding T&E or SC species at the site.

Establishing Survey Points

Point count surveys will be the accepted methodology, and all points will be placed in suitable grassland habitat. Suitable grassland sites are areas ("patches") larger than 12 acres (approximately 5 hectares) that are dominated by grasses and forbs. There may be multiple grassland patches at each site separated by obstructions such as forests, hedgerows, large roads, and developed areas. Sampling areas within patches will be defined by outlining the section of each grassland patch that is approximately 100 meters from obstructions as mentioned above. In some cases, it may be appropriate to site a survey point at the edge of grassland habitat, or less than 100 meters from obstructions.

Each point count will be a 100-meter radius circular plot survey centered on the observation point. The minimum distance between survey point centers in all directions will be 250 meters. The size of the grassland sampling area determines the number of

points that are established. Survey points are placed to obtain the maximum number of points per sampling area. The initial placement of the circles/points does not need to be random, although, they need to be systematically located to cover open habitat throughout the entire project area, particularly where project components may be cited. As many points at each site as possible will be surveyed, but in larger grassland patches the actual points to survey will be randomly selected from all possible points in the sampling area. At least 1 point per 25 acres (approximately 10 hectares) of open habitat should be surveyed. The surveys should also include qualitative meander surveys. Meander surveys are done between points, with the aim to focus on locations where T&E or SC species were seen from the survey point engaged in potential breeding behaviors and will help to ensure that the most suitable habitats for T&E grassland birds have been adequately covered.

The inclusion of some points within or adjacent to the project area to cover areas not intended for development is also recommended. Data on bird use of such areas will provide information on potential siting options that may avoid or minimize impacts to T&E species, and areas that could serve as mitigation parcels (if needed) or be used as reference areas for post-construction monitoring.

Timing of Surveys

Morning surveys will be conducted starting one half hour before sunrise until no later than 10:30am. Approximately seven days should pass between morning surveys at a given point. The order in which points are surveyed will be reversed during each survey period, so that the same point is not always surveyed during the same time of morning. Evening surveys will be conducted two hours before sunset until one hour after sunset. Approximately seven days should pass between evening surveys at a given point. The order in which points are surveyed will be reversed during each survey period, so that the same point is not always surveyed during the same time of evening. Evening surveys are not meant to replace morning surveys; they are conducted during the same survey period as morning surveys, and points may be visited on an independent rotation. Surveys will not be conducted during inclement weather, including precipitation, fog, or strong winds (i.e. greater than 10-12mph, or Beaufort Scale 3).

Conducting Surveys

Standard point counts are to be conducted for five minutes after an initial two or more minutes of silence after the observer arrives at the point to allow birds to recover from any disturbance. All birds observed visually or by ear within approximately 100 meters of points will be recorded as part of the survey, and birds observed visually or by ear beyond 100 meters from the point and during meander surveys (while walking between points) will be recorded as incidentals.

Recording Data

Data recorded for each survey point will include the following: date; observer(s) name; site name; point number; point location (coordinates); start and end time of observation

period; survey period; whether a morning or an evening survey; and weather information. Weather information includes temperature, wind speed and direction, precipitation and cloud cover. During the five-minute point count the following will be recorded: species identification; number of individuals per species (actual number or write > 20 if large numbers); individual behavior (nesting or courtship behaviors, foraging, high flyover, perching, singing, etc.) and the "highest" behavior code will be recorded for each species (for descriptions of breeding codes, see: https://ebird.org/atlasny/about/breeding-codes). Observations of flyovers, grassland bird species heard or seen >100m from the point, and grassland bird species heard or seen while walking between points will also be recorded. All T&E species detected in the project area will be documented, even if outside of regular survey or meander survey times (i.e. incidental observations made while at the vehicle, while driving between survey locations, while walking to survey point, in project areas not targeted for survey).

For every individual T&E species documented in the project area, including those detected outside of regular survey times or locations (i.e. incidental observations), the date, time, and behavior observed must be recorded, and perch locations, potential or confirmed nest locations, foraging areas, flight paths, and flight height mapped on aerial photographs.

General habitat characteristics of the project site will be described. Site description information will be collected on a separate data sheet after the point counts are complete during each survey period, and will include information such as: habitat type and management/land use information, distance from a trail or road, distance from hedgerow or wood line, and vegetation measurements within 25 meters of the survey point.

Vegetation measurements within 25 meters of the survey point are as follows: Percent cover of each vegetation type (grass, forb, or woody) and percent bare ground; dominant grass and forb; average vegetation height; litter depth; and nearest shrub above vegetation height. A robel pole should be used for average height and density measured from four cardinal directions and then averaged. The presence of invasive species, and any recent management practices will also be recorded.

NYSDEC recommends that all data collected also be entered into eBird, and for data collected prior to January 1, 2025, entered into eBird under the New York State Breeding Bird Atlas portal. For more information, see: https://ebird.org/atlasny/about/

Reporting Requirements

A detailed, site-specific work plan, including GIS shapefiles (.shp) of the proposed project boundary, survey point locations and survey schedule must be developed and submitted to NYSDEC for review and written approval prior to the start of field work. A final report must be submitted to NYSDEC at the conclusion of each survey season. Final reports must minimally include the following:

- the overall survey period and dates, times, and durations of surveys conducted at each point;

- description of habitat surrounding each point, noting any changes during the survey period;
- number of species observed overall;
- total number of individuals of each species observed at each point, overall and by date;
- summaries of the number and behavior of birds seen and whether any active nests or recently fledged young were observed or suspected;
- for T&E species, whether any behaviors designated as "probable" or "confirmed" breeding were observed, following Breeding Bird Atlas codes;
- a list or table of all species with all dates and points where they were observed;
- the point(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
- a description of weather conditions during and immediately prior to survey days;
- a description of any disruptions and/or distractions that occurred during each survey that may have precluded an adequate survey;
- a detailed discussion of all methods and results;
- one or more maps, as needed, which display all observations of all individuals of T&E and SC species, and any other species targeted at the site, indicating observation date and behavior code;
- photographs of the habitat taken from survey points; and
- copies of all data sheets, as a separate appendix or attachment to the report.

For all individuals of T&E species documented while in the project area, detailed information on the location, method of detection, behavior, flight paths, foraging areas, and all other relevant data will be clearly shown on the map(s), or otherwise made available in the report. GIS shapefiles (.shp) depicting the survey point locations, and date, time, location, flight paths, flight height, and behavior of each individual T&E species documented on site must be provided with the report.

The report will also include a discussion and conclusion regarding whether more comprehensive studies may be necessary to adequately assess the potential for the project to negatively affect endangered or threatened grassland nesting bird species.

Grassland Bird Survey
Point Count Data Sheet

Date: _____ **Observer:** _____

Point #: _____ **Site Name:** _____

Wind Speed: 0-3 / 4-6 / 7-10 mph **Cloud Cover**: 0 / ≤ 25 / ≤ 50 / ≤ 75 / >75% **Temperature**: _____°F / °C

Start Time: _____ (end count after 5 minutes) **Replicate:** 1 / 2 / 3 / evening

SPECIES	CODE	# of Males Singing or visual ID	# of Females Visual ID	# of Unknown Sex (not singing, sexes alike)	Behavior Code record highest code if observed	Number Observed >100 m from points	Number Observed	
							Between Points	Flyover Species
Bobolink *	BOBO							
Eastern Meadowlark	EAME							
Savannah Sparrow	SAVS							
Grasshopper Sparrow	**GRSP**							
Henslow's Sparrow	**HESP**							
Vesper Sparrow	**VESP**							
Upland Sandpiper	**UPSA**							
Sedge Wren	**SEWR**							
Northern Harrier	**NOHA**							
American Kestrel	AMKE							
Short-eared Owl	SEOW							
Horned Lark	HOLA							
Golden-winged Warbler	GWWA							

Behavior codes:

N=Carrying nesting material
DD=Distraction display
FL=*Recently* fledged young
ON=Going into nest box
FS=Adult carrying fecal sac
FY=Adult with food for young (carrying food or feeding young)
NE/NY=Nest with eggs/nest with young
MF=Mixed flock of adults & juveniles

Note: Loggerhead Shrike and Dickcissel should be noted if present.

***May use categories instead of exact count if >5 individuals: 6-10 or >10 (if desired).**

Beaufort Wind Scale

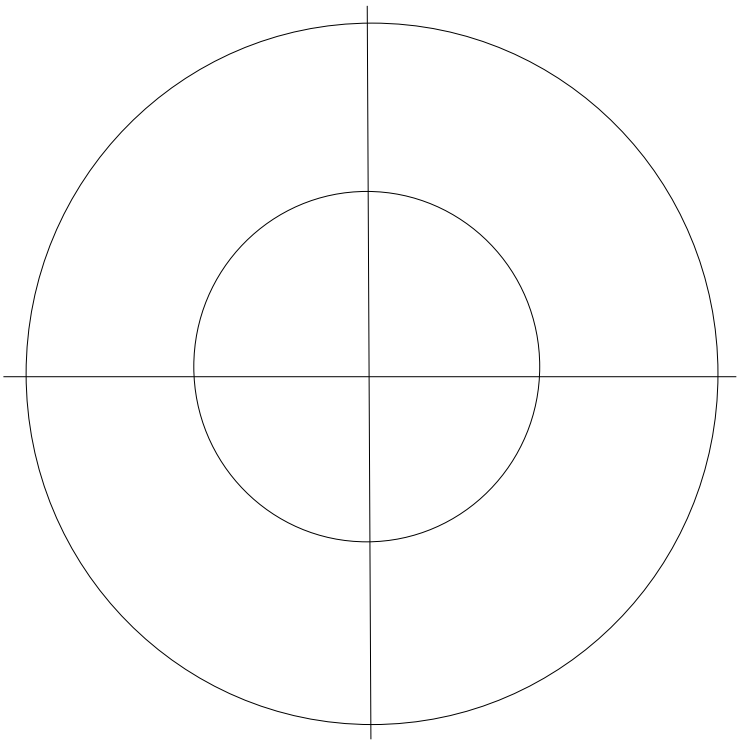
0-3 mph:
Calm/smoke rises vertically (0 mph) or Smoke drift indicates wind direction/still wind vanes (1-3 mph).

4-6 mph:
Wind felt on face, leaves rustle, vanes begin to move.

7-10 mph:
Leaves & small twigs constantly moving, light flags extended.

Comments:

100 Meters



Date: _____ **Observer:** _____

Site Name: _____ **Patch Name:** _____

Point #: _____ **Replicate:** 1 / 2 / 3 / evening

Habitat Type (check one):

	Warm-season grass		Mixed warm/cool		Wet Meadow		Fallow Row Crop		Hay
	Cool-season grass		Old Field		Pasture		Row Crop		Other (describe)

Other: _____

Distance from trail/road: _____ **Distance from Hedgerow/Woods:** _____

Within 25 m radius of survey point:

% Grass:		Dominant grass	
% Forb:		Dominant Forb	
% Bare:		Est. Veg. Height (average)	
% Woody:		Litter depth (cm)	
Total =	100%		

Invasive Species present:

Species	% Cover	Type of Distribution (small/large patch, single/few plants, scattered throughout, etc.)

Distance to Nearest Shrub (above veg. ht.):_____

Average height/density:

Robel pole (nearest 0.5 decimeter)	N	S	E	W	Avg.

Estimated Vegetation Density (check one)		**Rank**=ground not visible through base of stems at ground level, cannot easily push hand through the stems.
		Moderate=anything that falls between these two extremes.
		Sparse=ground easily visible through the bases of widely scattered stems.

Management (describe site management/land use): **# of Years since last mowed/burned:** ____

_____

_____

Sketch of site if needed:

Attachment E. Threatened and Endangered Grassland Bird Species Net Conservation Benefit Plan

Lockport-Batavia Line 112
Rebuild Project

Threatened and Endangered Grassland Bird Species
Net Conservation Benefit Plan

January 2026

CASE 22-T-0654

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 Introduction

Niagara Mohawk Corporation d/b/a National Grid (National Grid) is proposing to rebuild a portion of the Lockport-Batavia 112 115kV transmission line (the "Project"). The Project spans approximately 19.7 miles between the City of Lockport, through the Town of Lockport and the Town of Royalton, to the Town of Alabama, New York (the "Project Area"). An Article VII application for this Project was filed with the New York State Public Service Commission ("Commission") on November 18, 2022. On September 24, 2024, the Commission issued the Certificate in an Order Adopting Joint Proposal ("Order") in this proceeding.

During the Article VII application process, four New York State-listed threatened or endangered grassland bird species were identified as potentially occurring within or adjacent to the Project Area: short-eared owl (*Asio flammeus,* endangered), northern harrier (*Circus hudsonius,* threatened), sedge wren (*Cistothorus stellaris*, threatened), and Henslow's sparrow (*Centronyx henslowii*, threatened). Short-eared owl have been documented wintering within the Project vicinity while sedge wren and Henslow's sparrow have been documented during the breeding season. Northern harrier have been observed during both the wintering and breeding seasons.

The Project transverses two "Significant Raptor Winter Concentration Areas" which encompass the New York State Department of Environmental Conservation's (NYSDEC) John White Wildlife Management Area (WMA) and Tonawanda WMA as well as surrounding public and private lands. Short-eared owl and northern harrier are regularly documented within these areas each winter utilizing grasslands, row crop fields, and fallow fields. The grasslands within the WMAs, as well as some privately owned grasslands, provide habitat for breeding grassland birds, including sedge wren and Henslow's sparrow.

Within the Article VII permitting process, the Certificate Conditions stated NYSDEC-imposed restrictive dates for occupied habitat to prevent impacts to listed species. National Grid plans to abide by these restrictive dates as much as possible. Should construction need to occur within these timeframes, minimization strategies, such as pre-construction surveys and on-site monitors, will be implemented. In the event these avoidance and minimization strategies are unsuccessful in preventing the taking of any listed grassland bird species, National Grid will implement this Net Conservation Benefit Plan in accordance with the requirements of the State Endangered Species Act (Environmental Conservation Law §11-0535 [ECL Article 11]) and implementing regulations 6 New York Codes, Rules, and Regulations (NYCRR) Part 182.

2.0 Net Conservation Benefit

According to 6 NYCRR Part 182.2, the term "net conservation benefit" is defined as follows:

> *Net conservation benefit means a successful enhancement of the species' subject population, successful enhancement of the species' overall population or a contribution to the recovery of the species within New York. To be classified as a net conservation benefit, the enhancement or contribution must benefit the affected species listed as endangered or threatened in this Part or its habitat to a greater degree than if the applicant's proposed activity were not undertaken.*

Impacts to listed grassland birds from the Project will be temporary and may include the temporary loss of habitat through the placement of timber mats and disturbance from construction activity. Mitigation will offset these unavoidable impacts.

Properly managed grassland on the landscape is crucial to the long-term support of wintering and breeding grassland birds, including short-eared owl, northern harrier, sedge wren, and Henslow's sparrow. NYSDEC manages most of the grasslands within the Project Area in a way that provides ideal habitat for these species. Invasive species threaten these grasslands by competing with native vegetation and reducing habitat quality. To provide a net conservation benefit, National Grid will map and treat invasive species that decrease grassland bird habitat value within and adjacent to the Project Area for two years post construction. NYSDEC requires achievement of a net conservation benefit for breeding grassland birds of a 3:1 (new/improved: impacted) ratio of quality habitat to be created or enhanced, and a ratio of 1:1 for wintering species. Impacts to wintering species will be mitigated by mapping and treating invasives within an area equal to the area of the transmission line right-of-way. Impacts to breeding species will extend these mitigation measures to an area equal to the 3:1 ratio of treated area to impacted right-of-way. National Grid will work with NYSDEC to identify the exact species and locations for treatment. The proposed plan is designed to achieve a net conservation benefit to listed grassland birds and is legally, technologically, economically, and biologically practicable.

3.1 Proposed Plan

Invasive species are defined by NYSDEC as "non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health" (NYSDEC 2018). Invasive species represent one of the most significant threats to ecosystems, human and animal health, infrastructure, the economy, and cultural resources (NISC 2016). Climate change is likely to exacerbate the issue.

The phenomenon of plant invasion following disturbances of habitat is widely accepted in the scientific community (Woitke & Dietz 2002). In general, invasive species colonization is promoted

by disturbance, observed during a controlled field experiment that examined regeneration of native plant versus invasive plants based on type and frequency of disturbance (Woitke & Dietz 2002). Disturbance can come from many sources such as flooding, damaging storms, mowing, construction, and even preparing ground for seeding of natives. Timing is crucial in these situations, as any bare ground is susceptible to colonization by unwanted species.

Numerous invasive species have the potential to colonize and negatively impact grasslands in the region. Many have been documented within or near the Project area including creeping (*Cirsium arvense*) and bull (*Cirsium vulgare*) thistle, wild teasel (*Dipsacus fullonum*), black (*Vincetoxicum nigrum*) and pale (*Vincetoxicum rossicum*) swallowwort, reed canary grass (*Phalaris arundinacea*), spotted knapweed (*Centaurea stoebe*), mugwort (*Artemisia vulgaris*), Dame's rocket (*Hesperis matronalis*), and garlic mustard (*Alliaria petiolata*), among others. If a regular mowing regime is not followed, woody invasive species, such as honeysuckle (*Lonicera spp.*), European buckthorn (*Rhamnus cathartica*), and multiflora rose (*Rosa multiflora*), can quickly establish. If left unchecked, invasive species have the potential to spread, outcompeting desirable vegetation and changing the habitat structure, thus reducing the habitat quality for grassland birds (Morgan and Burger 2008). NYSDEC has identified the locations of species that pose a risk to the grasslands at John White and Tonawanda WMA. They will direct National Grid and/or their contractor to the species and areas that require treatment as part of this Net Conservation Benefit Plan. The first step to managing these species is through careful mapping to fully document the location and extent of infestation so that the proper treatment method can be used.

3.1.1 Treatment Methods

Multiple methods for treatment will be utilized throughout the mitigation area. The specific method used is dependent upon the species to be treated, the density of that species, and the location. A brief description of each method is described below.

Treatments will be conducted within the optimal window during the growing season to ensure the highest success rate. Multiple trips will likely be necessary, targeting a different suite of species each time. Property owners will be given at least a two-day notice prior to any herbicide application. Prior to beginning applications, pesticide warning signs will be placed at 50-foot intervals along all pedestrian access points and walking trails. Work will be conducted Monday through Friday between 7:00am and 5:00pm, excluding holidays.

Hand Pulling

Small plants and those with shallow roots will be removed via hand pulling. Individual plants will be pulled out, being sure to remove as much of the root as possible, before being bagged into a heavy duty contractor bag before being properly disposed.

Clip, Bag, and Remove Seed Heads

If a target species has begun forming seed heads, the removal of these heads might be undertaken to avoid future spread of the species. Seed heads will be hand clipped from the plant prior to seed set, placed into a secure plastic bag, then taken to a proper disposal site.

Handwicking Application
This method will only be used on sparse patches in areas with sensitive native vegetation that would be negatively impacted by other treatment methods. Applicators will apply herbicide to the thumb, fingers, and palm of a cotton wicking glove worn over a chemical resistant glove. The herbicide is then wiped onto the leaves and stem of the target plant.

Foliar Spot Application
Foliar spot applications will be completed using low pressure backpack sprayers to thoroughly cover the foliage of each plant with the herbicide solution. Multiple crew members working closely together will walk transects through the sites to ensure all target species are treated. Wind direction and existing features at each site will be used to determine transect areas.

ATV Boom and Gun Sprayer Application
In areas where target species are of high density and few native species are present, an ATV mounted 40-gallon spray rig will be used to apply herbicide to the foliage. This rig includes the option for boom and/or gun spraying. Boom sprayers involve a bar mounted to the back of the ATV that applies herbicide through multiple nozzles at the same time, allowing for efficient treatment of large areas. Gun sprayers apply herbicide through a single nozzle but at a higher pressure than a backpack sprayer. The higher pressure, longer house, and large tank allow for broadcast treatments of larger areas than is possible with a backpack sprayer. Each ATV sprayer will require two crew members, a driver and a sprayer. Wind direction, existing features of the site, and nearby facilities such as residences, businesses, and roads, will be considered when determining the starting point and direction of applications.

3.1.2 Herbicides

In many scenarios, herbicides are the best method for controlling invasive plants. While mechanical treatments can be used for certain species, these methods tend to be less successful and more labor intensive. Other species cannot be effectively controlled via mechanical methods due to their extensive root systems and their ability to resprout from small root fragments left behind. When used appropriately, herbicides are effective for killing invasive plants with little detrimental ecological impact.

For this project, three herbicides will be used, all with different active ingredients (Table 1). One herbicide is more effective at controlling a species than another, thus the need for multiple. Each species will be targeted with the most effective herbicide and treatment method to ensure efficient and effective control. In addition to the herbicide, a non-ionic surfactant will be added to the mix. The purpose of the surfactant is to produce a more uniform coverage of the herbicide and assist

with penetration into the plant. Lastly, a blue indicator dye will be added to the herbicide mix, which allows others to see areas which have been treated. This dye allows applicators to ensure complete coverage while alerting anyone else utilizing the area exactly where a chemical has been applied. The dye will fade over time, especially during rain events.

Garlon 3a® (active ingredient triclopyr) and Milestone® (active ingredient aminopyralid) are both broad-leaf specific herbicides, which mean that they have very little impact on most grasses. Rodeo® (active ingredient glyphosate) is a non-selective herbicide, meaning it will kill most plants it comes into contact with. Both Rodeo and Garlon 3a can be used over open water, whereas Milestone can only be used up to the water's edge. While all three are approved for use in New York (see Appendix A for Product Labels and Safety Data Sheets), glyphosate use on state-owned property is prohibited, although invasive species control is one of the exemptions. We will work with NYSDEC to ensure compliance with the state law if glyphosate is to be used on state property.

Herbicide applications will not take place on days where rain or high winds are forecasted. All manufacturers' guidelines, product label guidelines, state and federal regulations, and other determinations made by the property owners will be adhered to. All applicators will possess a current New York State Commercial Pesticide Applicator License. Applications will not be made over water unless there is an active NYSDEC Article 15 Permit in place at that location.

Table 1. Herbicides and Additives

EPA Reg. Number	Chemical Name	Active Ingredient	Type
62719-324	Rodeo	Glyphosate	Herbicide
62719-37	Garlon 3a	Triclopyr	Herbicide
62719-519	Milestone	Aminopyralid	Herbicide
N/A	Induce	Alkyl Aryl Polyoxylkane Ethers	Surfactant
N/A	Blue Spray Indicator	N/A	Dye

3.1.3 Seeding

Treatment of dense patches of invasive species may lead to exposed bare ground. To reduce the likelihood of these areas being recolonized by invasive species, a native seed mix will applied at a rate of 12 pounds per acre. Rye (*Secale cereale*) will be seeded at the same time as a cover crop at a rate of 20 pounds per acre. The mix, using seeds available from Ernst Conservation Seeds, is listed in Table 2.

Table 2. Proposed Grassland Seed Mix				
Common Name	**Scientific Name**	**% of mix**	**Seeds/lb**	**Seeds/lb of mix**
Canada Wildrye	*Elymus canadensis*	**25.0%**	114,000	28,500
Virginia Wildrye, Madison-NY Ecotype	*Elymus virginicus*	**25.0%**	73,000	18,250
Blunt Broom Sedge, PA Ecotype	*Carex scoparia*	**1.0%**	1,344,000	13,440
Prairie Cordgrass	*Sporobolus michauxianus* (Syn: *Spartina pectinata*)	**5.0%**	639,000	31,950
Deertongue, Tioga	*Panicum clandestinum*	**5.0%**	350,000	17,500
Big Bluestem, 'Niagara'	*Andropogon gerardii*	**5.0%**	144,000	7,200
Indiangrass, PA Ecotype	*Sorghastrum nutans*	**5.0%**	175,000	8,750
Switchgrass	*Panicum virgatum*	**5.0%**	259,000	12,950
Fox Sedge, PA Ecotype	*Carex vulpinoidea*	**1.0%**	1,297,000	12,970
Partridge Pea, PA Ecotype	*Chamaecrista fasciculata*	**10.0%**	65,000	6,500
Black-eyed Susan	*Rudbeckia hirta*	**1.0%**	1,576,000	15,760
Oxeye Sunflower, PA Ecotype	*Heliopsis helianthoides*	**3.0%**	102,000	3,060
Showy Ticktrefoil, PA Ecotype	*Desmodium canadense*	**2.0%**	72,500	1,450
Common Milkweed, PA Ecotype	*Asclepias syriaca*	**1.0%**	70,000	700
Wild Bergamot, PA Ecotype	*Monarda fistulosa*	**1.0%**	1,272,500	12,725
Smooth Blue Aster, NY Ecotype	*Symphyotrichum laeve*	**0.5%**	1,014,000	5,070
Tall White Beardtongue, PA Ecotype	*Penstemon digitalis*	**1.0%**	400,000	4,000
Ohio Spiderwort, PA Ecotype	*Tradescantia ohiensis*	**0.5%**	128,000	640
Brown-eyed Susan, WV Ecotype	*Rudbeckia triloba*	**2.0%**	536,000	10,720
Blue False Indigo	*Baptisia australis*	**1.0%**	22,000	220

3.0 Proposed Methods for Monitoring

The monitoring component of the mitigation strategy will ensure successful implementation of the Net Conservation Benefit Plan. As mentioned above, a baseline survey will be conducted prior to treatments to document all existing invasive species. Mapping will also be conducted in the two

years post-treatment to document treatment success. Annual reports will be compiled and submitted to NYSDEC detailing all mapping and management efforts for the year.

4.0 Implementation Agreement

National Grid will implement the Net Conservation Benefit Plan as required in the Certificate Conditions. Baseline mapping will be conducted within the growing season post construction to ensure that vegetation has rebounded and to document any potential invasive species that may have been introduced or spread during construction. An annual report will detail management actions undertaken and the results of mapping efforts. The implementation schedule is shown below in Table 3.

Table 3. Estimated Implementation Schedule

Activity	Start	End	Comments
Post Construction Baseline Invasive Survey	5/1/2027	5/31/2027	
Year 1 Invasive Treatments	6/1/2027	9/30/2027	Multiple trips to treat within optimal windows.
Annual Report	Due by December 31, 2027		
Post Treatment Invasive Survey	5/1/2028	5/31/2028	
Year 2 Invasive Treatments	6/1/2028	9/30/2028	Multiple trips to treat within optimal windows.
Annual Report	Due by December 31, 2028		
Final Invasive Survey	5/1/2029	5/31/2029	
Final Report	Due by July 1, 2029		

5.0 Commitment to Fund and Execute

National Grid has active easements within the powerline rights-of-ways that allows for vegetation management in these areas. If mitigation work needs to occur outside of the right-of-way, National Grid will secure the appropriate permits and permissions before proceeding. Funding will be set aside to cover the cost to hire a qualified contractor to conduct this mitigation work. An estimated maximum cost is detailed in Table 4. Actual cost will be influenced by the amount of area needed for mitigation and the invasive species coverage within that mitigation area.

Table 4. Estimated Costs of Plan Implementation	
Task	**Estimated Cost**
Invasive Species Mapping	$13,800
Invasive Treatment	$21,000
Seeding	$4,800
Reporting	$6,800
Total:	**$46,400**

6.0 References

Morgan, M and M. Burger. 2008. Plan for Conserving Grassland Birds in New York. Audubon New York. Ithaca, New York, USA.

New York State Department of Environmental Conservation (NYSDEC) and New York State Agriculture and Markets. 2018. New York State Invasive Species Comprehensive Management Plan. Albany, New York, USA.

Woitke, M. and H. Dietz. 2002. Shifts in Dominance of Native and Invasive Plants in Experimental Patches of Vegetation. Perspectives in Plant Ecology, Evolution and Systematics 5: 165-184.

Attachment A. Product Labels and Safety Data Sheets

Classified for
"RESTRICTED USE"
in New York State
under 6NYCRR Part 326

CORTEVA agriscience

GROUP	4	HERBICIDE

ACCEPTED FOR REGISTRATION
ONLY IN CONJUNCTION WITH
NEW YORK STATE SPECIFIC
SUPPLEMENTAL LABELING
SLN NY-110005

JUNE 03 2025

New York State Department of
Environmental Conservation
Division of Materials Management
Pesticide Product Registration

Garlon® 3A

HERBICIDE

Doc ID: 599971

For the control of woody plants, broadleaf weeds in range and pasture, forests and non-crop areas, including manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, and around farm buildings; and applications to grazed areas, and establishment and maintenance of wildlife openings, and in Christmas tree plantations and aquatic sites.

For use in New York State, comply with Section 24(c) Special Local Need labeling for Garlon 3A, SLN NY-110005.

Active Ingredient:	
Triclopyr: 2-[(3,5,6-trichloro-2-pyridinyl)oxy] acetic acid, triethylamine salt	44.4%
Other Ingredients	55.6%
Total	100.0%

Acid equivalent: triclopyr - 31.8% - 3 lb/gal

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

First Aid (Cont.)

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to Applicator: Allergic skin reaction is not expected from exposure to spray mixtures of Garlon 3A herbicide when used as directed.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Refer to inside of label booklet for additional precautionary information including Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-37

EPA Est. 62719-MI-002
293342 2503
CD02-101-022

Scan for safety information in Spanish.
Escanee para la información de seguridad en español.

Produced for
Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268

NET CONTENTS 2.5 GAL

SAFETY DATA SHEET
DOW AGROSCIENCES LLC

Product name: GARLON™ 3A Herbicide

Issue Date: 10/26/2020
Print Date: 10/26/2020

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. IDENTIFICATION

Product name: GARLON™ 3A Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number	:	800-992-5994
E-mail address	:	customerinformation@corteva.com

EMERGENCY TELEPHONE

24-Hour Emergency Contact	:	800-992-5994
Local Emergency Contact	:	352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Flammable liquids - Category 3
Eye irritation - Category 2A
Specific target organ toxicity - repeated exposure - Category 2

Label elements
Hazard pictograms

Signal Word: **WARNING!**

Hazards
Flammable liquid and vapor.
Causes serious eye irritation.
May cause damage to organs (Kidney) through prolonged or repeated exposure.

Precautionary statements

Prevention
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Wear protective gloves/ eye protection/ face protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical advice/ attention if you feel unwell.
If eye irritation persists: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage
Store in a well-ventilated place. Keep cool.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Triclopyr Triethylamine Salt	57213-69-1	44.05%
Ethanol	64-17-5	2.1%
Balance	Not available	53.85%

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Eliminate ignition sources. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Keep unnecessary and unprotected personnel from entering the area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. Refer to section 7, Handling, for additional precautionary measures. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact the company for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Keep out of reach of children. Do not swallow. No smoking, open flames or sources of ignition in handling and storage area. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Electrically ground and bond all equipment. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies. Minimize sources of ignition, such as static build-up, heat, spark or flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Triclopyr Triethylamine Salt	Dow IHG	TWA	2 mg/m3
	Dow IHG	TWA	SKIN, DSEN, BEI
Ethanol	ACGIH	STEL	1,000 ppm
	OSHA Z-1	TWA	1,900 mg/m3 1,000 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Physical state Liquid.

Color	Pink to purple
Odor	Ammoniacal
Odor Threshold	No data available
pH	9.54 10% *pH Electrode*
Melting point/range	Not applicable to liquids
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	**closed cup** 43 °C (109 °F) *Setaflash Closed Cup ASTM D3828*
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.1385 at 20 °C (68 °F) *Digital Density Meter (Oscillating Coil)*
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	12.5 mPa.s at 25 °C (77 °F)
Kinematic Viscosity	No data available
Explosive properties	No *Thermal*
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	1.1385 g/ml at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures.

Incompatible materials: Avoid contact with: Oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product:
LD50, Rat, female, 4,100 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rabbit, male and female, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product:
LC50, Rat, male and female, 4 Hour, Mist, > 5.4 mg/l
Maximum attainable concentration.
No deaths occurred at this concentration.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause moderate eye irritation.
May cause moderate corneal injury.

Sensitization
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
In animals, effects have been reported on the following organs:
Kidney.

Carcinogenicity
For similar active ingredient(s). Triclopyr. Did not cause cancer in laboratory animals.

Teratogenicity
For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

For the minor component(s): Has caused birth defects in lab animals at high doses.

Reproductive toxicity
For similar active ingredient(s). Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 400 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Lepomis macrochirus (Bluegill sunfish), semi-static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates
EC50, eastern oyster (Crassostrea virginica), static test, 48 Hour, 56 - 87 mg/l, Method Not Specified.

LC50, Daphnia magna (Water flea), static test, 48 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 107 mg/l, OECD Test Guideline 201 or Equivalent

ErC50, blue-green alga Anabaena flos-aquae, 72 Hour, Growth inhibition, > 100 mg/l

EC50, Lemna gibba, 7 d, Growth inhibition, > 100 mg/l

Based on information for a similar material:
ErC50, Myriophyllum spicatum, 14 d, 0.241 mg/l

Based on information for a similar material:
NOEC, Myriophyllum spicatum, 14 d, 0.0191 mg/l

Persistence and degradability

Triclopyr Triethylamine Salt

Biodegradability: For similar active ingredient(s). Triclopyr. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).
For similar active ingredient(s). Triclopyr. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: > 70 %
Exposure time: 5 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 2.99 d
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Triclopyr Triethylamine Salt

Bioaccumulation: For similar active ingredient(s). Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Ethanol

Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.31 Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Triclopyr Triethylamine Salt

For similar active ingredient(s).
Potential for mobility in soil is very high (Koc between 0 and 50).

Ethanol

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 1.0 Estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s.(Triclopyr Triethylamine Salt, Ethanol)
UN number	NA 1993
Class	CBL
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III
Marine pollutant	Triclopyr Triethylamine Salt
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Flammable liquid, n.o.s.(Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Components	**CASRN**
Triclopyr Triethylamine Salt	57213-69-1

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Ethanol	64-17-5

California Prop. 65
WARNING: This product can expose you to chemicals including Propylene oxide, Ethylene Oxide, which is/are known to the State of California to cause cancer, and Ethylene Oxide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 62719-037
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive
Causes irreversible eye damage
Harmful if swallowed or absorbed through skin
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Flammability	Instability
3	2	0

Revision
Identification Number: 4861 / Issue Date: 10/26/2020 / Version: 13.0
DAS Code: XRM-3724
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
SKIN, DSEN, BEI	Absorbed via Skin, Skin Sensitizer, Biological Exposure Indice
STEL	Short-term exposure limit
TWA	Time Weighted Average (TWA):

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

3 Labels Attached

Doc ID: 564291

GLYPHOSATE	GROUP	9	HERBICIDE

CORTEVA™ agriscience

Rodeo®

Classified for "RESTRICTED USE" in New York State under 6NYCRR Part 326

ACCEPTED
VIA NOTIFICATION
LABEL NOT REVIEWED
SEPT 30 2019
New York State Department
of Environmental Conservation
Division of Materials Management
Pesticide Product Registration

HERBICIDE

For control of annual and perennial weeds and woody plants in natural and production (plantations), forests for site preparation, mid-rotation release treatments, timber stand improvement activities, noncrop sites including industrial sites, rights-of-way (including roadsides, electric utility and communication transmission lines, pipelines, railroads, airports), irrigation and drainage ditches, canals, reservoirs, natural areas (including wildlife management areas, wildlife openings, wildlife habitats and refuges, parks and recreational areas, campgrounds, trailheads and trails), rangeland, and in and around aquatic sites and wetlands; also for perennial grass release, and grass growth suppression and grazed areas on these sites.

Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

Active Ingredient:	
glyphosate† N-(phosphonomethyl)glycine, isopropylamine salt	53.8%
Other Ingredients	46.2%
Total	100.0%

†Contains 5.4 lb per gallon glyphosate, isopropylamine salt (4 lb per gallon glyphosate acid).

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Terms and Conditions of Use, Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-324

EPA Est. 070989-MO-001
99037966 1904

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

6 62974 31679 4

NET CONTENTS 2.5 GAL

Dow AgroSciences

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: RODEO Herbicide

Issue Date: 11/10/2015
Print Date: 11/10/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: RODEO Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture
This product is a mixture.

Component	CASRN	Concentration
Glyphosate IPA salt	38641-94-0	53.75%

Isopropylamine	75-31-0	5.8%
Balance	Not available	40.45%

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Straight or direct water streams may not be effective to extinguish fire. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may vent and/or rupture due to fire. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied,

can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Never use air pressure for transferring product. Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Do not store in: Carbon steel. Galvanized containers. Steel. Flammable mixtures may exist within the vapor space of containers at room temperature. Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Isopropylamine	ACGIH	TWA	5 ppm
	ACGIH	STEL	10 ppm
	OSHA Z-1	TWA	12 mg/m3 5 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber (“latex”). Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Polyvinyl chloride (“PVC” or “vinyl”). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Yellow
Odor	Odorless
Odor Threshold	No data available
pH	4.8 *pH Electrode*
Melting point/range	Not applicable
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	**closed cup** > 93 °C (> 199 °F) *Setaflash Closed Cup ASTM D3828* none below boiling point
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.21 at 22 °C (72 °F) / 4 °C *Pyknometer*
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	none below 400 degC
Decomposition temperature	No test data available
Dynamic Viscosity	64.6 mPa.s at 20 °C (68 °F)
Kinematic Viscosity	53.4 mm2/s at 20 °C (68 °F)
Explosive properties	No
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	1.20 g/cm3 at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures. Avoid static discharge.

Incompatible materials: Heat produced by the reaction with water will cause vaporization. Flammable hydrogen may be generated from contact with metals such as:

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rabbit, male and female, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 6.37 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For similar active ingredient(s).
Glyphosate.
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
For the minor component(s):
In animals, effects have been reported on the following organs after inhalation:
Eye.
Respiratory tract.

Carcinogenicity
For similar material(s): Glyphosate. Did not cause cancer in laboratory animals. Weight of evidence evaluation of epidemiology studies supports no association between glyphosate exposure and cancer.

Teratogenicity
For similar active ingredient(s). Glyphosate. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity
For similar active ingredient(s). Glyphosate. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity
For the active ingredient(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	**List**	**Classification**
Glyphosate IPA salt	IARC	Group 2A: Probably carcinogenic to humans

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 2,500 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, 918 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 127 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), > 2000mg/kg bodyweight.

contact LD50, Apis mellifera (bees), > 100µg/bee

oral LD50, Apis mellifera (bees), > 100µg/bee

Persistence and degradability

Glyphosate IPA salt

Biodegradability: For similar active ingredient(s). Glyphosate. Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 0.115 d
Method: Estimated.

Isopropylamine

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 3.53 mg/mg

Chemical Oxygen Demand: 1,300 - 1,975 mg/g

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	18.3 %
10 d	54 %
20 d	59 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 3.26 Hour
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Bioaccumulation: For similar active ingredient(s). Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Mobility in soil

For similar active ingredient(s).
Expected to be relatively immobile in soil (Koc > 5000).

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is not a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	**CASRN**
Isopropylamine	75-31-0

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 62719-324
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if inhaled

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	2	0

Revision
Identification Number: 101188488 / A211 / Issue Date: 11/10/2015 / Version: 4.0
DAS Code: NAF-552
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

AMINOPYRALID	GROUP	4	HERBICIDE

CORTEVA™ agriscience

DOC ID 570180

Milestone®

ACCEPTED
FOR REGISTRATION
October 22, 2020
New York State Department
of Environmental Conservation
Division of Materials Management
Pesticide Product Registration

Classified for "RESTRICTED USE" in New York State under 6NYCRR Part 326

HERBICIDE

- **For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines on:**
  - **rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP);**
  - **non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses;**
  - **natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools;**
  - **including grazed areas in and around these sites.**

***Hay from grass treated with Milestone within the preceding 18 months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling.**

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.

Active Ingredient:	
Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	40.6%
Other Ingredients	59.4%
Total	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Refer to inside of label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs, or clothing.

EPA Reg. No. 62719-519 EPA Est. 62719-MI-002 97015298 2007

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

6 62974 58106 2

NET CONTENTS 2.5 GAL

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: MILESTONE™ Herbicide

Issue Date: 08/29/2019
Print Date: 08/29/2019

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. IDENTIFICATION

Product name: MILESTONE™ Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@corteva.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Not a hazardous substance or mixture.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Aminopyralid Triisopropanolamine Salt	566191-89-7	40.6%

Triisopropanolamine	122-20-3	1.5%
Balance	Not available	57.9%

4. FIRST AID MEASURES

Description of first aid measures
General advice:
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: None known.

Special hazards arising from the substance or mixture
Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.

Advice for firefighters
Fire Fighting Procedures: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage: Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers**:** None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Triisopropanolamine	Dow IHG	TWA	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Brown
Odor	Mild
Odor Threshold	No data available
pH	7.3 *pH Electrode*
Melting point/range	No data available
Freezing point	< -10 °C (< 14 °F)
Boiling point (760 mmHg)	No data available
Flash point	**closed cup** > 100 °C (> 212 °F) *Pensky-Martens Closed Cup ASTM D 93*
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available

Relative Density (water = 1)	No data available
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	none below 400 degC
Decomposition temperature	No data available
Dynamic Viscosity	12.2 cP at 20 °C (68 °F) *EPA OPPTS 830.7100 (Viscosity)*
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Liquid Density	1.1401 g/mL at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available
Surface tension	54.4 mN/m at20 °C (68 °F)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: No decomposition if stored and applied as directed. Stable under normal conditions.

Possibility of hazardous reactions: None known.
No hazards to be specially mentioned.

Conditions to avoid: None known.

Incompatible materials: Avoid contact with: Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.79 mg/l

Skin corrosion/irritation
Essentially nonirritating to skin.

Serious eye damage/eye irritation
Essentially nonirritating to eyes.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
For similar active ingredient(s). Aminopyralid. Did not cause cancer in laboratory animals.

Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For similar active ingredient(s). Aminopyralid. In animal studies, did not interfere with reproduction.

Mutagenicity
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 360 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Cyprinodon variegatus (sheepshead minnow), static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 460 mg/l

LC50, saltwater mysid Mysidopsis bahia, static test, 96 Hour, > 104 mg/l

Acute toxicity to algae/aquatic plants
For similar material(s):
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

For similar material(s):
ErC50, Myriophyllum spicatum, 14 d, 0.363 mg/l

For similar material(s):
NOEC, Myriophyllum spicatum, 14 d, 0.0639 mg/l

For similar material(s):
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50, Colinus virginianus (Bobwhite quail), > 21422mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail), > 10,000 ppm

oral LD50, Apis mellifera (bees), > 460micrograms/bee

contact LD50, Apis mellifera (bees), > 460micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, survival, > 10,000 mg/kg

Persistence and degradability

Aminopyralid Triisopropanolamine Salt
Biodegradability: For similar material(s): Aminopyralid. Material is not readily biodegradable according to OECD/EEC guidelines.

Triisopropanolamine
Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Biodegradation rate may increase in soil and/or water with acclimation. Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.35 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 3 Hour
Method: Estimated.

Balance
Biodegradability: No relevant data found.

Bioaccumulative potential

Aminopyralid Triisopropanolamine Salt
Bioaccumulation: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Triisopropanolamine
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.015 at 23 °C Measured
Bioconcentration factor (BCF): < 0.57 Fish 42 d Measured

Balance
Bioaccumulation: No relevant data found.

Mobility in soil

Aminopyralid Triisopropanolamine Salt
For similar active ingredient(s).
Aminopyralid.
Potential for mobility in soil is very high (Koc between 0 and 50).

Triisopropanolamine
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 10 Estimated.

Balance
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Aminopyralid Triisopropanolamine Salt)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Aminopyralid Triisopropanolamine Salt
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Aminopyralid Triisopropanolamine Salt)
UN number	UN 3082
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**

Triisopropanolamine 122-20-3

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 62719-519
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Flammability	Instability
1	1	0

Revision
Identification Number: 266154 / A211 / Issue Date: 08/29/2019 / Version: 9.1
DAS Code: GF-871
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time weighted average

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International

Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

INDUCE®

A Nonionic Low Foam Wetter/Spreader Adjuvant

***ACTIVE INGREDIENTS:**

Alkyl Aryl Polyoxylkane Ethers and Free Fatty Acids	90.0%
Constituents ineffective as spray adjuvants	10.0%
TOTAL	100.0%

*All ingredients are accepted for use under CFR 40, 180.

KEEP OUT OF REACH OF CHILDREN

WARNING

See Inside Booklet For Additional Precautionary Statements

CASN 1205/1206

NET CONTENTS:

Cal. Reg. No. 5905-50091-AA

MANUFACTURED FOR
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300
COLLIERVILLE, TN 38017

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING

Safety Data Sheet

1. Identification

Product Name : INDUCE
Synonyms : None
Product Use : Nonionic Low Foam Wetter/Spreader Adjuvant
Manufacturer/Supplier : Helena Chemical Company
Address : 225 Schilling Blvd. Collierville, TN 38017
General Information : 901-761-0050
Transportation Emergency Number : CHEMTREC:800-424-9300

2. Hazard Identification

Signal Word : Warning
Skin Irritation : Moderately irritating
Eye Irritation : Severely irritating in non-washed eye (35.8); moderately irritating in washed eye (16.3); Injury was reversible.
Acute Toxicity Oral : LD50 >4,000 mg/kg (rat)
Acute Toxicity Dermal : LD50 >2,000 mg/kg (rat)

Hazard Categories : Oral/Dermal/Inhalation Toxicity - 5/5/5; Eye Irritation - 2A; Skin Irritation - 2

Hazard Statement : May be harmful if swallowed
May be harmful in contact with skin
Causes serious eye irritation
Causes skin irritation
May be harmful if inhaled

3. Composition / Information on Ingredients

Component	CAS Number	Weight %
Alkyl Aryl Polyoxylkane ethers, alkanolamides, dimethyl siloxane, and free fatty acids.	Proprietary	90.00
Components ineffective as adjuvant.	Nonhazardous	10.00

4. First Aid Measures

Eye : Immediately flush eyes with water for at least 15 minutes. See a physician.
Skin : Remove contaminated clothing and wash skin with soap and water. Call a physician if irritation persists.
Inhalation : Move victim to fresh air. Give artificial respiration if needed. See a physician.
Ingestion : Give a large amount of water to drink, induce vomiting and immediately call a physician. Do not induce vomiting or give anything by mouth to an unconscious person.
Indication of Immediate Medical Attention and Special Treatment Needed : If contact is made with the spray solution containing pesticides, refer to the "Statement of Practical Treatment/First Aid" on the pesticide label(s). Otherwise, treat symptomatically.

5. Fire Fighting Measures

Extinguishing Media : Use dry chemical, water spray, water fog, carbon dioxide, foam, or sand/earth.

Specific Hazards Arising from the Chemical	: Water spray be ineffective. Cool fire-exposed containers with water. Fog nozzles are preferable. Closed containers may rupture or explode when exposed to extreme heat.
Special Fire Fight Proc	: Wear self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Personal Precautions	: Keep unprotected and unnecessary personnel out of spill area.
Protective Equipment	: Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Eyewash should be available in work area. Use NIOSH-approved respirator with organic vapor cartridge if PEL exceeded.
Emergency Procedures	: Prevent spreading of spilled material into any waterways, drains or sewers.
Methods and Materials for Containment and Cleanup	: Absorb with an inert material such as sand, soil or vermiculite. Sweep up and dispose of in accordance with Federal, State and Local regulations.

7. Handling and Storage

Precautions for Safe Handling	: Keep out of reach of children. Keep container tightly closed. Do not contaminate water sources by runoff from cleaning of equipment, disposal of equipment wash waters or spray waste.
Conditions for Safe Storage	: Do not store with food, feed or other material to be used or consumed by humans or animals. Store in original container only. Do not allow water to be introduced into the contents of this container.

8. Exposure Controls / Personal Protection

TLV/PEL	: PEL 100 mg/m3.
Appropriate Engineering Controls	: Mechanical exhaust system
Personal Protective Equipment	: Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Eyewash should be available in work area. Use NIOSH-approved respirator with organic vapor cartridge if PEL exceeded.

9. Physical and Chemical Properties

Odor/Appearance	: Clear-slightly hazy colorless to yellow liquid.
Flash Point, ^{0}F	: >200 Degrees F.
Boiling Point, ^{0}F	: >250 Degrees F.
Melting Point(Freezing point), ^{0}C	: Not applicable
Vapor Pressure, mm Hg @ 20 ^{0}C	: Not established
Vapor Density	: 2.1
Solubility in Water	: Dispersible
Molecular Formula	: Not applicable, formulated mixture.
Density, g/mL @ 25 ^{0}C	: 0.956-1.033
Evaporation Rate(Butyl Acetate = 1)	: Not applicable
Octanol/Water Partition Coefficient	: No information found
pH	: 4-5.0
Flammable Limits (approximate volume % in air)	: No information found
Auto-ignition Temperature	: >750 Degrees F.
Decomposition temperature	: No information found

10. Stability and Reactivity

Reactivity	: No information found
Chemical Stability	: Stable
Hazardous Decomposition Products	: Carbon monoxide and carbon dioxide under fire conditions.
Hazardous Polymerization	: Will not occur
Conditions to Avoid	: Excessive heat and open flames.
Incompatible Materials	: Do not mix with strong oxidizers such as hydrogen peroxide, bromine and chromic acid.

11. Toxicological Information

Acute Toxicity (Oral LD50)	: >4,000 mg/kg (rat)
Acute Toxicity (Dermal LD50)	: >2,000 mg/kg (rat)
Acute Toxicity Inhalation LC50	: 2.02 mg/L (vapor limit)
Likely Routes of Exposure	: Eyes, skin.
Skin Irritation	: Moderately irritating.
Eye Irritation	: Severely irritating in non-washed eyes (35.8), moderately irritating in washed eyes (16.3). Injury was reversible.
Skin Sensitization	: Not listed as a sensitizer.
Carcinogenic	: Not listed by IARC, NTP or OSHA.
Chronic Effects	: None currently known.
Other Hazards	: May contain components which, in laboratory tests, have been toxic to the fetus only at doses toxic to the mother.

12. Ecological Information

Ecotoxicity	: No information found
Persistence and Degradability	: No information found
Bioaccumulative Potential	: No information found
Mobility in Soil	: No information found
Other Adverse Effects	: Contains Alcohol C-12-C-16 Poly (1-6) Ethoxylate - a marine pollutant.

13. Disposal Considerations

Waste Disposal Method	: This material must be disposed of according to Federal, State or Local procedures under the Resource Conservation and Recovery Act.

14. Transport Information

UN Proper Shipping Name	: Not regulated by DOT in non-bulk packages. Regulated in bulk or if shipped by air (IATA) or vessel (IMDG) as Environmentally Hazardous Substance, Liquid, n.o.s., (Alcohol C12-C16 Poly (1-6) Ethoxylate)
Transport Hazard Class	: Class 9 (bulk/IATA/IMDG)
UN Identification Number	: 3082(bulk/IATA/IMDG)
Packaging Group	: PG III (bulk/IATA/IMDG)
Environmental Hazards	: Marine Pollutant
Transport in Bulk	: Marine Pollutant
Special Precautions for Transportation	: No information found

Freight Classification : Adhesives, Adjuvants, Spreaders or Stickers, N.O.I. (NMFC Item 42652, Class 60)

15. Regulatory Information

National Fire Protection Association Rating :

Health: 1 Fire: 1 Reactivity: 0

Rating Level: (4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Minimum)

S.A.R.A Title III Hazard Classification (Yes/No) :

Immediate(Acute) Health:	Y
Delayed (Chronic) Health:	N
Sudden Release of Pressure:	N
Fire:	N
Reactive:	N

16. Other Information

Data of Preparation/Revision : 04-August-2015

Attachment F. Threatened and Endangered Marsh Bird Species Net Conservation Benefit Plan

Lockport-Batavia Line 112
Rebuild Project

Threatened and Endangered Marsh Bird Species
Net Conservation Benefit Plan

January 2026

CASE 22-T-0654

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 Introduction

Niagara Mohawk Corporation d/b/a National Grid (National Grid) is proposing to rebuild a portion of the Lockport-Batavia 112 115kV transmission line (the "Project"). The Project spans approximately 19.7 miles between the City of Lockport, through the Town of Lockport and the Town of Royalton, to the Town of Alabama, New York (the "Project Area"). An Article VII application for this Project was filed with the New York State Public Service Commission ("Commission") on November 18, 2022. On September 24, 2024, the Commission issued the Certificate in an Order Adopting Joint Proposal ("Order") in this proceeding.

During the Article VII application process, five New York State-listed threatened or endangered marsh bird species were identified as potentially occurring within or adjacent to the Project Area during the breeding season: black tern (*Chlidonias niger*), least bittern (*Botaurus exilis*), pied-billed grebe (*Podilymbus podiceps*), king rail (*Rallus elegans*), and northern harrier (*Circus hudsonius*). Marsh habitat for these species lies within the Tonawanda Wildlife Management Area (WMA).

Within the Article VII permitting process, the Certificate Conditions stated New York State Department of Environmental Conservation (NYSDEC)-imposed restrictive dates for occupied habitat to prevent impacts to listed species. National Grid plans to abide by these restrictive dates as much as possible. Should construction need to occur within these timeframes, minimization strategies, such as pre-construction surveys and on-site monitors, will be implemented. In the event these avoidance and minimization strategies are unsuccessful in preventing the taking of any listed marsh bird species, National Grid will implement this Net Conservation Benefit Plan in accordance with the requirements of the State Endangered Species Act (Environmental Conservation Law §11-0535 [ECL Article 11]) and implementing regulations 6 New York Codes, Rules, and Regulations (NYCRR) Part 182.

2.0 Net Conservation Benefit

According to 6 NYCRR Part 182.2, the term “net conservation benefit” is defined as follows:

> *Net conservation benefit means a successful enhancement of the species' subject population, successful enhancement of the species' overall population or a contribution to the recovery of the species within New York. To be classified as a net conservation benefit, the enhancement or contribution must benefit the affected species listed as endangered or threatened in this Part or its habitat to a greater degree than if the applicant's proposed activity were not undertaken.*

Impacts to listed marsh birds from the Project will be temporary and may include the temporary loss of habitat through the placement of timber mats and disturbance from construction activity. Mitigation will offset these unavoidable impacts.

Marsh birds have a long history of decline due to the loss or degradation of wetlands which they depend upon (NABCI 2025). NYSDEC manages the marshes within Tonawanda WMA to benefit a wide diversity of marsh bird species, including threatened and endangered species. Invasive species threaten these marshes by competing with native vegetation and reducing habitat quality. To provide a net conservation benefit, National Grid will map and treat invasive species that decrease marsh bird habitat value within and adjacent to the Project Area for two years post construction. NYSDEC requires achievement of a net conservation benefit for breeding marsh birds of a 3:1 (new/improved: impacted) ratio of quality habitat to be created or enhanced. Impacts will be mitigated by mapping and treating invasives within an area equal to three times the area of the impacted transmission line right-of-way. National Grid will work with NYSDEC to identify the exact species and locations for treatment. The proposed plan is designed to achieve a net conservation benefit to listed marsh birds and is legally, technologically, economically, and biologically practicable.

3.1 Proposed Plan

Invasive species are defined by NYSDEC as “non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health” (NYSDEC 2018). Invasive species represent one of the most significant threats to ecosystems, human and animal health, infrastructure, the economy, and cultural resources (NISC 2016). Climate change is likely to exacerbate the issue.

The phenomenon of plant invasion following disturbances of habitat is widely accepted in the scientific community (Woitke & Dietz 2002). In general, invasive species colonization is promoted by disturbance, observed during a controlled field experiment that examined regeneration of native plant versus invasive plants based on type and frequency of disturbance (Woitke & Dietz 2002).

Disturbance can come from many sources such as flooding, damaging storms, mowing, construction, and even preparing ground for seeding of natives. Timing is crucial in these situations, as any bare ground is susceptible to colonization by unwanted species.

Numerous invasive species have the potential to colonize and negatively impact marshes in the region. Many have been documented within or near the Project area including common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and European frogbit (*Hydrocharis morsus-ranae*), among others. If left unchecked, invasive species have the potential to spread, outcompeting desirable vegetation and changing the habitat structure, thus reducing the habitat quality for marsh birds. NYSDEC has identified the locations of species that pose a risk to the marshes at Tonawanda WMA. They will direct National Grid and/or their contractor to the species and areas that require treatment as part of this Net Conservation Benefit Plan. The first step to managing these species is through careful mapping to fully document the location and extent of infestation so that the proper treatment method can be used.

3.1.1 Treatment Methods

Multiple methods for treatment will be utilized throughout the mitigation area. The specific method used is dependent upon the species to be treated, the density of that species, and the location. A brief description of each method is described below.

Treatments will be conducted within the optimal window during the growing season to ensure the highest success rate. Multiple trips will likely be necessary, targeting a different suite of species each time. NYSDEC will be given at least a two-day notice prior to any herbicide application. Prior to beginning applications, pesticide warning signs will be placed at 50-foot intervals along all pedestrian access points and walking trails. Work will be conducted Monday through Friday between 7:00am and 5:00pm, excluding holidays.

Hand Pulling

Small plants and those with shallow roots will be removed via hand pulling. Individual plants will be pulled out, being sure to remove as much of the root as possible, before being bagged into a heavy duty contractor bag before being properly disposed.

Clip, Bag, and Remove Seed Heads

If a target species has begun forming seed heads, the removal of these heads might be undertaken to avoid future spread of the species. Seed heads will be hand clipped from the plant prior to seed set, placed into a secure plastic bag, then taken to a proper disposal site.

Handwicking Application

This method will only be used on sparse patches in areas with sensitive native vegetation that would be negatively impacted by other treatment methods. Applicators will apply herbicide to the thumb, fingers, and palm of a cotton wicking glove worn over a chemical resistant glove. The herbicide is then wiped onto the leaves and stem of the target plant.

Foliar Spot Application

Foliar spot applications will be completed using low pressure backpack sprayers to thoroughly cover the foliage of each plant with the herbicide solution. Multiple crew members working closely together will walk transects through the sites to ensure all target species are treated. Wind direction and existing features at each site will be used to determine transect areas.

Gun Sprayer Application

In areas where target species are of high density and few native species are present, an ATV or boat mounted 40-gallon gun spray rig will be used to apply herbicide to the foliage. Gun sprayers apply herbicide through a single nozzle but at a higher pressure than a backpack sprayer. The higher pressure, longer house, and large tank allow for broadcast treatments of larger areas than is possible with a backpack sprayer. Each ATV/boat sprayer will require two crew members, a driver and a sprayer. Wind direction, existing features of the site, and nearby facilities such as residences, businesses, and roads, will be considered when determining the starting point and direction of applications.

3.1.2 Herbicides

In many scenarios, herbicides are the best method for controlling invasive plants. While mechanical treatments can be used for certain species, these methods tend to be less successful and more labor intensive. Other species cannot be effectively controlled via mechanical methods due to their extensive root systems and their ability to resprout from small root fragments left behind. When used appropriately, herbicides are effective for killing invasive plants with little detrimental ecological impact.

For this project, two herbicides will be used, both with different active ingredients (Table 1). One herbicide is more effective at controlling a species than another, thus the need for multiple. Each species will be targeted with the most effective herbicide and treatment method to ensure efficient and effective control. In addition to the herbicide, a non-ionic surfactant will be added to the mix. The purpose of the surfactant is to produce a more uniform coverage of the herbicide and assist with penetration into the plant. Lastly, a blue indicator dye will be added to the herbicide mix, which allows others to see areas which have been treated. This dye allows applicators to ensure complete coverage while alerting anyone else utilizing the area exactly where a chemical has been applied. The dye will fade over time, especially during rain events.

Renovate 3® (active ingredient triclopyr) is a broad-leaf specific herbicides, which means they have very little impact on most grasses. Rodeo® (active ingredient glyphosate) is a non-selective herbicide, meaning it will kill most plants it comes into contact with. Both Rodeo and Renovate 3 are approved for aquatic use. While both are approved for use in New York (see Appendix A for Product Labels and Safety Data Sheets), glyphosate use on state-owned property is prohibited, although invasive species control is one of the exemptions. We will work with NYSDEC to ensure compliance with the state law if glyphosate is to be used on state property.

Herbicide applications will not take place on days where rain or high winds are forecasted. All manufacturers' guidelines, product label guidelines, state and federal regulations, and other determinations made by the property owners will be adhered to. All applicators will possess a current New York State Commercial Pesticide Applicator License. A NYSDEC Article 15 Permit will be obtained prior to any herbicide applications over open water.

Table 1. Herbicides and Additives

EPA Reg. Number	Chemical Name	Active Ingredient	Type
62719-324	Rodeo	Glyphosate	Herbicide
62719-37-67690	Renovate 3a	Triclopyr	Herbicide
N/A	Induce	Alkyl Aryl Polyoxylkane Ethers	Surfactant
N/A	Blue Spray Indicator	N/A	Dye

3.1.3 Seeding

Treatment of dense patches of invasive species may lead to exposed bare ground. To reduce the likelihood of these areas being recolonized by invasive species, a native seed mix will applied at a rate of 20 pounds per acre. Rye (*Secale cereale*) will be seeded at the same time as a cover crop at a rate of 20 pounds per acre. Ernst Conservation Seeds' OBL Wetland Mix will be used for the seeding (Table 2).

Table 2. Proposed Wetland Seed Mix

Common Name	Scientific Name	% of mix	Seeds/lb	Seeds/lb of mix
Lurid Sedge, PA Ecotype	*Carex lurida*	**27.4%**	250,000	68,500
Blunt Broom Sedge, PA Ecotype	*Carex scoparias*	**22.5%**	1,344,000	302,400
Fox Sedge, PA Ecotype	*Carex vulpinoidea*	**21.7%**	1,297,000	281,449
Eastern Bur Reed	*Sparganium americanum*	**6.9%**	50,000	3,450
Virginia Wildrye, Madison-NY Ecotype	*Elymus virginicus*	**5.0%**	73,000	3,650
Blue Vervain, PA Ecotype	*Verbena hastata*	**4.0%**	1,488,000	59,520
Soft Rush	*Juncus effusus*	**3.0%**	45,359,000	1,360,770
Swamp Milkweed, PA Ecotype	*Asclepias incarnata*	**2.0%**	153,760	3,075
Fowl Mannagrass, PA Ecotype	*Glyceria striata*	**1.2%**	1,540,000	18,480
Sensitive Fern	*Onoclea sensibilis*	**1.1%**	6,000,000	66,000

Table 2. Proposed Wetland Seed Mix				
Common Name	**Scientific Name**	**% of mix**	**Seeds/lb**	**Seeds/lb of mix**
Purplestem Aster, PA Ecotype	*Aster puniceus*	**1.0%**	700,000	7,000
Boneset, PA Ecotype	*Eupatorium perfoliatum*	**1.0%**	2,880,000	28,800
Softstem Bulrush, PA Ecotype	*Scirpus validus*	**1.0%**	496,000	4,960
Fringed Sedge, PA Ecotype	*Carex crinita*	**0.5%**	720,000	3,600
Woolgrass, PA Ecotype	*Scirpus cyperinus*	**0.5%**	36,000,000	180,000
Wrinkleleaf Goldenrod, PA Ecotype	*Solidago rugosa*	**0.5%**	1,000,000	5,000
Square Stemmed Monkeyflower, PA Ecotype	*Mimulus ringens*	**0.3%**	22,900,000	68,700
Tussock Sedge, PA Ecotype	*Carex stricta*	**0.2%**	1,800,000	3,600
American Water Horehound, PA Ecotype	*Lycopus americanus*	**0.2%**	3,025,300	6,050

3.0 Proposed Methods for Monitoring

The monitoring component of the mitigation strategy will ensure successful implementation of the Net Conservation Benefit Plan. As mentioned above, a baseline survey will be conducted prior to treatments to document all existing invasive species. Mapping will also be conducted in the two years post-treatment to document treatment success. Annual reports will be compiled and submitted to NYSDEC detailing all mapping and management efforts for the year.

4.0 Implementation Agreement

National Grid will implement the Net Conservation Benefit Plan as required in the Certificate Conditions. Baseline mapping will be conducted within the growing season post construction to ensure that vegetation has rebounded and to document any potential invasive species that may have been introduced or spread during construction. An annual report will detail management actions undertaken and the results of mapping efforts. The implementation schedule is shown below in Table 3.

Table 3. Estimated Implementation Schedule			
Activity	**Start**	**End**	**Comments**
Post Construction Baseline Invasive Survey	5/1/2027	5/31/2027	

Table 3. Estimated Implementation Schedule			
Activity	**Start**	**End**	**Comments**
Year 1 Invasive Treatments	6/1/2027	9/30/2027	Multiple trips to treat within optimal windows.
Annual Report	Due by December 31, 2027		
Post Treatment Invasive Survey	5/1/2028	5/31/2028	
Year 2 Invasive Treatments	6/1/2028	9/30/2028	Multiple trips to treat within optimal windows.
Annual Report	Due by December 31, 2028		
Final Invasive Survey	5/1/2029	5/31/2029	
Final Report	Due by July 1, 2029		

5.0 Commitment to Fund and Execute

National Grid has active easements within the powerline rights-of-ways that allows for vegetation management in these areas. If mitigation work needs to occur outside of the right-of-way, National Grid will secure the appropriate permits and permissions before proceeding. Funding will be set aside to cover the cost to hire a qualified contractor to conduct this mitigation work. An estimated maximum cost is detailed in Table 4. Actual cost will be influenced by the amount of area needed for mitigation and the invasive species coverage within that mitigation area.

Table 4. Estimated Costs of Plan Implementation	
Task	**Estimated Cost**
Invasive Species Mapping	$18,900
Invasive Treatment	$28,000
Seeding	$4,900
Reporting	$6,800
Total:	**$58,600**

6.0 References

New York State Department of Environmental Conservation (NYSDEC) and New York State Agriculture and Markets. 2018. New York State Invasive Species Comprehensive Management Plan. Albany, New York, USA.

North American Bird Conservation Initiative. 2025. The State of the Birds, United States of America, 2025. StateoftheBirds.org

Woitke, M. and H. Dietz. 2002. Shifts in Dominance of Native and Invasive Plants in Experimental Patches of Vegetation. Perspectives in Plant Ecology, Evolution and Systematics 5: 165-184.

Attachment A. Product Labels and Safety Data Sheets

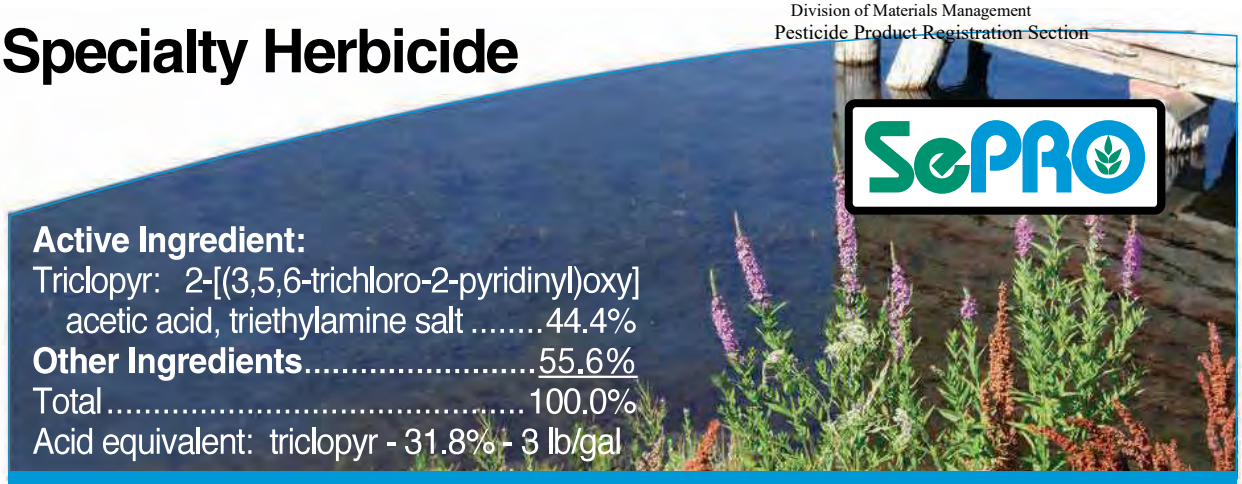
DOC ID 547023

ACCEPTED FOR REGISTRATION
ONLY IN CONJUNCTION WITH
NEW YORK STATE SPECIFIC
SUPPLEMENTAL LABELING
SLN NY- 060001
Oct. 26, 2016
New York State Department of
Environmental Conservation
Division of Materials Management
Pesticide Product Registration Section

1086.121

Renovate® 3

Specialty Herbicide



Active Ingredient:
Triclopyr: 2-[(3,5,6-trichloro-2-pyridinyl)oxy] acetic acid, triethylamine salt 44.4%
Other Ingredients.....55.6%
Total.....100.0%
Acid equivalent: triclopyr - 31.8% - 3 lb/gal

Keep Out of Reach of Children

DANGER / PELIGRO

Classified for "RESTRICTED USE" in New York State under 6NYCRR Part 326

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

First Aid
If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.

Note to Applicator: Allergic skin reaction is not expected from exposure to spray mixtures of Renovate 3 herbicide when used as directed.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Refer to inside of label booklet for additional precautionary information including Directions for Use.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-37-67690
FPL20160603

EPA Est. No. 067690-NC-002
168602

Produced for :
SePRO Corporation 11550 N. Meridian Street, Suite 600, Carmel, IN 46032 U.S.A.

Net contents 1 quart (Non-refillable)

Conforms to HazCom 2012/United States

SAFETY DATA SHEET

Renovate® 3

Herbicide

Section 1. Identification

GHS product identifier : Renovate® 3 Herbicide

Recommended use of the chemical and restrictions on use Identified uses : Herbicide

Supplier's details : SePRO Corporation
11550 North Meridian Street
Suite 600
Carmel, IN 46032 U.S.A.
Tel: 317-580-8282
Toll free: 1-800-419-7779
Fax: 317-580-8290
Monday - Friday, 8am to 5pm E.S.T.
www.sepro.com

Emergency telephone number (with hours of operation) : **INFOTRAC - 24-hour service 1-800-535-5053**

The following recommendations for exposure controls and personal protection are intended for the manufacture, formulation and packaging of this product. For applications and/or use, consult the product label. The label directions supersede the text of this Safety Data Sheet for application and/or use.

Section 2. Hazards identification

Hazard classification

GHS classification in accordance with 29CFR 1910.1200.
Flammable liquids - Category 3
Eye irritation - Category 2A
Specific target organ toxicity - repeated exposure - Category 2

Label elements
Hazard pictograms

Signal word: WARNING!

Hazards Flammable liquid and vapor.
Causes serious eye irritation.
May cause damage to organs (kidney) through prolonged or repeated exposure.

Precautionary statements

Prevention Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Wear protective gloves/ eye protection/ face protection.

Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical attention if you feel unwell.
If eye irritation persists: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage Store in a well-ventilated place. Keep cool.

Disposal Dispose of contents/ container to an approved waste disposal plant.

Other hazards No data available

Section 3. Composition/information on ingredients

This product is a mixture.

Component	CASRN	Concentration
Triclopyr Triethylamine Salt	57213-69-1	44.05%
Ethanol	64-17-5	2.10%
Balance	Not Available	53.85%

Section 4. First aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Section 5. Fire-fighting measures

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Straight or direct water streams may not be effective to extinguish fire. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Eliminate ignition sources. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause

environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Only Trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. Refer to section 7, Handling, for additional precautionary measures. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact SePRO Corporation for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and storage

Precautions for safe handling: Keep away from heat, sparks and flame. Keep out of reach of children. Do not swallow. No smoking, open flames or sources of ignition in handling and storage area. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can container vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Electrically ground and bond all equipment. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flashback may occur. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies. Minimize sources of ignition, such as static build-up, heat, spark or flame.

Section 8. Exposure controls/personal protection

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Triclopyr Triethylamine Salt	Dow IHG	TWA	2 mg/m^3
	Dow IHG	TWA	SKIN, DSEN, BEI
Ethanol	ACGIH	STEL	1,000 ppm
	OSHA Z-1	TWA	1,900 mg/m^3 1,000 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl "). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Section 9. Physical and chemical properties

Appearance	
Physical State	Liquid
Color	Pink
Odor	Ammoniacal
Odor Threshold	No test data available
pH	9.5 10% *pH Electrode*
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	Closed cup 43 °C (109 °F) *Setaflash Closed Cup ASTM D3828*
Evaporation Rate (Butyl Acetate =1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper lower explosion limit	No data available
Vapor pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.1385 at 20 °C (68 °F) *Digital Density Meter (Oscillating Coil)*
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	12.5 mPa.s at 25 °C (77 °F)
Kinematic Viscosity	No data available
Explosive properties	No *Thermal*
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	1.1385 g/ml at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

Section 10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures.

Incompatible materials: Avoid contact with: Oxidizers

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

Section 11. Toxicological information

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.
As product: LD50, Rat, female, 4100 mg/kg

Acute dermal toxicity Prolonged skin contact is unlikely to result in absorption of harmful amounts.
As product: LD50, Rabbit, male and female, > 5,000 mg/kg

Acute inhalation toxicity No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
As product: LC50, Rat, male and female, 4 Hour, Mist, > 5.4 mg/l
Maximum attainable concentration.
No deaths occurred at this concentration.

Skin corrosion/irritation Brief contact is essentially nonirritating to skin.

Serious eye damage/ eye irritation May cause moderate eye irritation.
May cause moderate corneal injury.

Sensitization Did not demonstrate the potential for contact allergy in mice.
For respiratory sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure) Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure) For the active ingredient(s): In animals, effects have been reported on the following organs: Kidney.

Carcinogenicity For similar active ingredient(s). Triclopyr. Did not cause cancer in laboratory animals.

Teratogenicity For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

For the minor component(s): Has caused birth defects in lab animals at high doses.

Reproductive toxicity For similar active ingredient(s). Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard Based on physical properties, not likely to be an aspiration hazard.

Section 12. Ecological information

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 400 mg/l, OECD Test Guideline 203 or Equivalent.

LC50, *Lepomis macrochirus* (Bluegill sunfish), semi-static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic Invertebrates

EC50, eastern oyster (*Crassostrea virginica*), static test, 48 Hour, 56 - 87 mg/l, Method Not Specified.

LC50, *Daphnia magna* (Water flea), static test, 48 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent.

Acute toxicity to algae/ aquatic plants

Based on information for a similar material:
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/l in the most sensitive species tested.

ErC50, *Pseudokirchneriella subcapitata* (green algae), 72hr, Growth rate inhibition, 107 mg/l, OECD Test Guideline 201 or Equivalent

ErC50, blue-green alga *Anabaena flos-aquae*, 72 Hour, Growth inhibition, > 100 mg/l

EC50, *Lemna gibba*, 7 d, Growth inhibition, > 100 mg/l

Based on information for a similar material
ErC50, *Myriophyllum spicaturn*, 14 day, 0.241 mg/l

Based on information for a similar material
NOEC, *Myriophyllum spicaturn*, 14 day, 0.0191 mg/l

Persistence and degradability

Triclopyr Triethylamine Salt

Biodegradability: For similar active ingredient(s). Triclopyr. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).
For similar active ingredient(s). Triclopyr. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: > 70%
Exposure time: 5 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation **Test Type:** Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 2.99 d
Method: Estimated.

Balance
Biodegradability: No relevant data found.

Bioaccumulative potential

Triclopyr Triethylamine Salt
Bioaccumulation: For similar active ingredient(s). Bioconcentration potential is low (BCF < 100 or Log Pow <3).

Ethanol
Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow <3).
Partition Coefficient: n-octanol/water(log Pow) = -0.31 Measured.

Balance
Bioaccumulation: No relevant data found.

Mobility in soil

Triclopyr Triethylamine Salt For similar active ingredient(s).
Potential for mobility in soil is very high (Koc between 0 and 50).

Ethanol Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 1.0 Estimated.

Balance No relevant data found.

Section 13. Disposal considerations

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14. Transport information

DOT

Proper shipping name	Combustible liquid, n.o.s. (Triclopyr Triethylamine Salt, Ethanol)
UN Number	NA 1993
Class	CBL
Packing Group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S. (Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III
Marine pollutant	Triclopyr Triethylamine Salt
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Flammable liquid, n.o.s.(Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15. Regulatory information

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gasses, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

Components	CASRN
Triclopyr Triethylamine Salt	57213-69-1

Pennsylvania Right-To-Know

The following chemicals are listed because of the additional requirements of Pennsylvania Law.

Components	CASRN
Ethanol	64-17-5

California Proposition 65

WARNING: This product can expose you to chemicals including Propylene oxide, Ethylene Oxide, which is/are known to the State of California to cause cancer, and Ethylene Oxide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 62719-37-67690
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
Corrosive
Causes irreversible eye damage
Harmful if swallowed or absorbed through skin
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Section 16. Other information

Hazard Rating System
NFPA

Health: 3 Fire: 2 Instability: 0

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
DOW IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
SKIN, DSEN, BEI	Absorbed via Skin, Skin Sensitizer, Biological Exposure Indice
STEL	Short-term exposure limit
TWA	Time Weighted Average

History

Date of issue mm/dd/yyyy: 07/17/2018

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

3 Labels Attached

Doc ID: 564291

GLYPHOSATE	GROUP	9	HERBICIDE

CORTEVA™ agriscience

Rodeo®

Classified for "RESTRICTED USE" in New York State under 6NYCRR Part 326

ACCEPTED
VIA NOTIFICATION
LABEL NOT REVIEWED
SEPT 30 2019
New York State Department
of Environmental Conservation
Division of Materials Management
Pesticide Product Registration

HERBICIDE

For control of annual and perennial weeds and woody plants in natural and production (plantations), forests for site preparation, mid-rotation release treatments, timber stand improvement activities, noncrop sites including industrial sites, rights-of-way (including roadsides, electric utility and communication transmission lines, pipelines, railroads, airports), irrigation and drainage ditches, canals, reservoirs, natural areas (including wildlife management areas, wildlife openings, wildlife habitats and refuges, parks and recreational areas, campgrounds, trailheads and trails), rangeland, and in and around aquatic sites and wetlands; also for perennial grass release, and grass growth suppression and grazed areas on these sites.

Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

Active Ingredient:	
glyphosate† N-(phosphonomethyl)glycine, isopropylamine salt	53.8%
Other Ingredients	46.2%
Total	100.0%

†Contains 5.4 lb per gallon glyphosate, isopropylamine salt (4 lb per gallon glyphosate acid).

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Terms and Conditions of Use, Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-324

EPA Est. 070989-MO-001
99037966 1904

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

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NET CONTENTS 2.5 GAL

Dow AgroSciences

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: RODEO Herbicide

Issue Date: 11/10/2015
Print Date: 11/10/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: RODEO Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture
This product is a mixture.

Component	CASRN	Concentration
Glyphosate IPA salt	38641-94-0	53.75%

Isopropylamine	75-31-0	5.8%
Balance	Not available	40.45%

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Straight or direct water streams may not be effective to extinguish fire. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may vent and/or rupture due to fire. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied,

can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Never use air pressure for transferring product. Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Do not store in: Carbon steel. Galvanized containers. Steel. Flammable mixtures may exist within the vapor space of containers at room temperature. Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Isopropylamine	ACGIH	TWA	5 ppm
	ACGIH	STEL	10 ppm
	OSHA Z-1	TWA	12 mg/m3 5 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber (“latex”). Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Polyvinyl chloride (“PVC” or “vinyl”). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Yellow
Odor	Odorless
Odor Threshold	No data available
pH	4.8 *pH Electrode*
Melting point/range	Not applicable
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	**closed cup** > 93 °C (> 199 °F) *Setaflash Closed Cup ASTM D3828* none below boiling point
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.21 at 22 °C (72 °F) / 4 °C *Pyknometer*
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	none below 400 degC
Decomposition temperature	No test data available
Dynamic Viscosity	64.6 mPa.s at 20 °C (68 °F)
Kinematic Viscosity	53.4 mm2/s at 20 °C (68 °F)
Explosive properties	No
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	1.20 g/cm3 at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures. Avoid static discharge.

Incompatible materials: Heat produced by the reaction with water will cause vaporization. Flammable hydrogen may be generated from contact with metals such as:

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rabbit, male and female, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 6.37 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For similar active ingredient(s).
Glyphosate.
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
For the minor component(s):
In animals, effects have been reported on the following organs after inhalation:
Eye.
Respiratory tract.

Carcinogenicity
For similar material(s): Glyphosate. Did not cause cancer in laboratory animals. Weight of evidence evaluation of epidemiology studies supports no association between glyphosate exposure and cancer.

Teratogenicity
For similar active ingredient(s). Glyphosate. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity
For similar active ingredient(s). Glyphosate. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity
For the active ingredient(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	**List**	**Classification**
Glyphosate IPA salt	IARC	Group 2A: Probably carcinogenic to humans

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 2,500 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, 918 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 127 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), > 2000mg/kg bodyweight.

contact LD50, Apis mellifera (bees), > 100µg/bee

oral LD50, Apis mellifera (bees), > 100µg/bee

Persistence and degradability

Glyphosate IPA salt

Biodegradability: For similar active ingredient(s). Glyphosate. Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 0.115 d
Method: Estimated.

Isopropylamine

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 3.53 mg/mg

Chemical Oxygen Demand: 1,300 - 1,975 mg/g

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	18.3 %
10 d	54 %
20 d	59 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 3.26 Hour
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Bioaccumulation: For similar active ingredient(s). Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Mobility in soil

For similar active ingredient(s).
Expected to be relatively immobile in soil (Koc > 5000).

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is not a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	**CASRN**
Isopropylamine	75-31-0

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 62719-324
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if inhaled

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	2	0

Revision
Identification Number: 101188488 / A211 / Issue Date: 11/10/2015 / Version: 4.0
DAS Code: NAF-552
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

INDUCE®

A Nonionic Low Foam Wetter/Spreader Adjuvant

***ACTIVE INGREDIENTS:**

Alkyl Aryl Polyoxylkane Ethers and Free Fatty Acids	90.0%
Constituents ineffective as spray adjuvants	10.0%
TOTAL	100.0%

*All ingredients are accepted for use under CFR 40, 180.

KEEP OUT OF REACH OF CHILDREN

WARNING

See Inside Booklet For Additional Precautionary Statements

CASN 1205/1206

NET CONTENTS:

Cal. Reg. No. 5905-50091-AA

MANUFACTURED FOR
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300
COLLIERVILLE, TN 38017

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING

BEFORE USING THIS PRODUCT, READ ALL PRECAUTIONS, DIRECTIONS FOR USE, CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES.

Formulated product causes eye and skin irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing vapors or spray mist. In addition, follow precautionary statements on accompanying pesticide(s) label(s).

FIRST AID	
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF INHALED:	• Move person to fresh air. • If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or Viton
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in original container only. Keep container tightly closed. Do not allow water to be introduced into the contents of this container. Do not store near heat or open flame. Do not store with oxidizing agents or ammonium nitrate.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water sources by runoff from cleaning of equipment, disposal of cleaning equipment washwaters, or spray waste.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For help in chemical emergencies involving spill, leak, fire or exposure, call toll free 1-800-424-9300.

GENERAL INFORMATION

INDUCE® is a nonionic wetter/spreader surfactant. **INDUCE®** incorporates the properties of a wetter/spreader surfactant when used in pesticidal spray mixtures. **INDUCE®** is designed to quickly wet and spread a more uniform spray deposit over leaf and stem surfaces. **INDUCE®** can positively affect pesticide spray application and pesticide efficacy. **INDUCE®** is recommended for use with those pesticides whose label recommends a non-ionic wetter/spreader-type adjuvant.

DIRECTIONS FOR USE

WITH PRODUCTS REGISTERED FOR: AGRICULTURAL, AQUATIC, FORESTRY, INDUSTRIAL, MUNICIPAL, NON-CROPLAND, ORNAMENTAL, RIGHTS-OF-WAY, TURF AND OTHER USES.

The addition of an adjuvant to some pesticides or pesticide tank mix combinations may cause phytotoxicity to the foliage and/or fruit of susceptible crops. Prior to the addition of **INDUCE®** to spray tank mixes, the user or application advisor must have experience with the combination or must have conducted a phytotoxicity trial or must take the recommendations from the labels of the products to be tank mixed.

INDUCE® may be applied by Ground, CDA, Aerial, or Aquatic spray equipment. For most applications, use enough **INDUCE®** to allow for uniform wetting and deposition of the spray onto leaf surfaces without undue runoff.

Ground, Aerial, CDA: Use 1/2 - 3 pints per 100 gallons of spray.

Aquatic: Use 1/2 - 4 pints per 100 gallons of spray.

Note: The above use recommendations are considered to be adequate for most uses. Some pesticides however, may require higher or lower rates for optimum effect. Follow the pesticide(s) label(s) directions when this occurs.

For uniform deposition and distribution of applied moisture:

Lawns and Turf: Use **INDUCE®** at .50% v/v concentration.

Greens and Tees: Use **INDUCE®** at .125 - .25% v/v concentration.

Feeding Trees: Use **INDUCE®** at .25 - .50% v/v concentration.

Application of **INDUCE®** through irrigation systems are possible provided that recommended use rates and dilutions are maintained and local, state, and federal guidelines are followed.

MIXING

Prior to any pesticide application all spray mixing and application equipment must be cleaned. Carefully observe all cleaning directions of the pesticide(s) label(s).

Fill spray tank one-half full with water and begin agitation. Add pesticides as directed by labeling or in the following sequence:

1. Dry flowables or water dispersible granules
2. Wettable powders
3. Flowables
4. Solutions
5. Emulsifiable concentrates

and continue filling. Add **INDUCE®** last and continue agitation.

CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

Read the Conditions of Sale–Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

INDUCE® is a registered trademark of Helena Holding Company.

A Nonionic Low Foam Wetter/Spreader Adjuvant

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CASN 1205/1206

NET CONTENTS:

Cal. Reg. No. 5905-50091-AA

MANUFACTURED FOR
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300
COLLIERVILLE, TN 38017

Safety Data Sheet

1. Identification

Product Name : INDUCE
Synonyms : None
Product Use : Nonionic Low Foam Wetter/Spreader Adjuvant
Manufacturer/Supplier : Helena Chemical Company
Address : 225 Schilling Blvd. Collierville, TN 38017
General Information : 901-761-0050
Transportation Emergency Number : CHEMTREC:800-424-9300

2. Hazard Identification

Signal Word : Warning
Skin Irritation : Moderately irritating
Eye Irritation : Severely irritating in non-washed eye (35.8); moderately irritating in washed eye (16.3); Injury was reversible.
Acute Toxicity Oral : LD50 >4,000 mg/kg (rat)
Acute Toxicity Dermal : LD50 >2,000 mg/kg (rat)

Hazard Categories : Oral/Dermal/Inhalation Toxicity - 5/5/5; Eye Irritation - 2A; Skin Irritation - 2

Hazard Statement : May be harmful if swallowed
May be harmful in contact with skin
Causes serious eye irritation
Causes skin irritation
May be harmful if inhaled

3. Composition / Information on Ingredients

Component	CAS Number	Weight %
Alkyl Aryl Polyoxylkane ethers, alkanolamides, dimethyl siloxane, and free fatty acids.	Proprietary	90.00
Components ineffective as adjuvant.	Nonhazardous	10.00

4. First Aid Measures

Eye : Immediately flush eyes with water for at least 15 minutes. See a physician.
Skin : Remove contaminated clothing and wash skin with soap and water. Call a physician if irritation persists.
Inhalation : Move victim to fresh air. Give artificial respiration if needed. See a physician.
Ingestion : Give a large amount of water to drink, induce vomiting and immediately call a physician. Do not induce vomiting or give anything by mouth to an unconscious person.
Indication of Immediate Medical Attention and Special Treatment Needed : If contact is made with the spray solution containing pesticides, refer to the "Statement of Practical Treatment/First Aid" on the pesticide label(s). Otherwise, treat symptomatically.

5. Fire Fighting Measures

Extinguishing Media : Use dry chemical, water spray, water fog, carbon dioxide, foam, or sand/earth.

Specific Hazards Arising from the Chemical	: Water spray be ineffective. Cool fire-exposed containers with water. Fog nozzles are preferable. Closed containers may rupture or explode when exposed to extreme heat.
Special Fire Fight Proc	: Wear self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Personal Precautions	: Keep unprotected and unnecessary personnel out of spill area.
Protective Equipment	: Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Eyewash should be available in work area. Use NIOSH-approved respirator with organic vapor cartridge if PEL exceeded.
Emergency Procedures	: Prevent spreading of spilled material into any waterways, drains or sewers.
Methods and Materials for Containment and Cleanup	: Absorb with an inert material such as sand, soil or vermiculite. Sweep up and dispose of in accordance with Federal, State and Local regulations.

7. Handling and Storage

Precautions for Safe Handling	: Keep out of reach of children. Keep container tightly closed. Do not contaminate water sources by runoff from cleaning of equipment, disposal of equipment wash waters or spray waste.
Conditions for Safe Storage	: Do not store with food, feed or other material to be used or consumed by humans or animals. Store in original container only. Do not allow water to be introduced into the contents of this container.

8. Exposure Controls / Personal Protection

TLV/PEL	: PEL 100 mg/m3.
Appropriate Engineering Controls	: Mechanical exhaust system
Personal Protective Equipment	: Splashproof goggles or face shield, chemical-resistant gloves, impervious apron and footwear. Eyewash should be available in work area. Use NIOSH-approved respirator with organic vapor cartridge if PEL exceeded.

9. Physical and Chemical Properties

Odor/Appearance	: Clear-slightly hazy colorless to yellow liquid.
Flash Point, ^{0}F	: >200 Degrees F.
Boiling Point, ^{0}F	: >250 Degrees F.
Melting Point(Freezing point), ^{0}C	: Not applicable
Vapor Pressure, mm Hg @ 20 ^{0}C	: Not established
Vapor Density	: 2.1
Solubility in Water	: Dispersible
Molecular Formula	: Not applicable, formulated mixture.
Density, g/mL @ 25 ^{0}C	: 0.956-1.033
Evaporation Rate(Butyl Acetate = 1)	: Not applicable
Octanol/Water Partition Coefficient	: No information found
pH	: 4-5.0
Flammable Limits (approximate volume % in air)	: No information found
Auto-ignition Temperature	: >750 Degrees F.
Decomposition temperature	: No information found

10. Stability and Reactivity

Reactivity	: No information found
Chemical Stability	: Stable
Hazardous Decomposition Products	: Carbon monoxide and carbon dioxide under fire conditions.
Hazardous Polymerization	: Will not occur
Conditions to Avoid	: Excessive heat and open flames.
Incompatible Materials	: Do not mix with strong oxidizers such as hydrogen peroxide, bromine and chromic acid.

11. Toxicological Information

Acute Toxicity (Oral LD50)	: >4,000 mg/kg (rat)
Acute Toxicity (Dermal LD50)	: >2,000 mg/kg (rat)
Acute Toxicity Inhalation LC50	: 2.02 mg/L (vapor limit)
Likely Routes of Exposure	: Eyes, skin.
Skin Irritation	: Moderately irritating.
Eye Irritation	: Severely irritating in non-washed eyes (35.8), moderately irritating in washed eyes (16.3). Injury was reversible.
Skin Sensitization	: Not listed as a sensitizer.
Carcinogenic	: Not listed by IARC, NTP or OSHA.
Chronic Effects	: None currently known.
Other Hazards	: May contain components which, in laboratory tests, have been toxic to the fetus only at doses toxic to the mother.

12. Ecological Information

Ecotoxicity	: No information found
Persistence and Degradability	: No information found
Bioaccumulative Potential	: No information found
Mobility in Soil	: No information found
Other Adverse Effects	: Contains Alcohol C-12-C-16 Poly (1-6) Ethoxylate - a marine pollutant.

13. Disposal Considerations

Waste Disposal Method	: This material must be disposed of according to Federal, State or Local procedures under the Resource Conservation and Recovery Act.

14. Transport Information

UN Proper Shipping Name	: Not regulated by DOT in non-bulk packages. Regulated in bulk or if shipped by air (IATA) or vessel (IMDG) as Environmentally Hazardous Substance, Liquid, n.o.s., (Alcohol C12-C16 Poly (1-6) Ethoxylate)
Transport Hazard Class	: Class 9 (bulk/IATA/IMDG)
UN Identification Number	: 3082(bulk/IATA/IMDG)
Packaging Group	: PG III (bulk/IATA/IMDG)
Environmental Hazards	: Marine Pollutant
Transport in Bulk	: Marine Pollutant
Special Precautions for Transportation	: No information found

Freight Classification : Adhesives, Adjuvants, Spreaders or Stickers, N.O.I. (NMFC Item 42652, Class 60)

15. Regulatory Information

National Fire Protection Association Rating :

Health: 1 Fire: 1 Reactivity: 0

Rating Level: (4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Minimum)

S.A.R.A Title III Hazard Classification (Yes/No) :

Immediate(Acute) Health:	Y
Delayed (Chronic) Health:	N
Sudden Release of Pressure:	N
Fire:	N
Reactive:	N

16. Other Information

Data of Preparation/Revision : 04-August-2015