

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

**HERBICIDE APPLICATION FOR INSTALLATION FENCELINE,
RAILROAD TRACKS, AND BROADLEAF WEED CONTROL**

NIAGARA FALLS AIR RESERVE STATION, NEW YORK



914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
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FEBRUARY 2006

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14. ABSTRACT The purpose of the Proposed Action is to control weeds at Niagara Falls ARS in accordance with the Integrated Pest Management Plan (IPMP) as necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The EA is tiered to the Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls Air Reserve Station, New York, June 13, 2005. Under the No Action Alternative, Niagara Falls ARS would not apply herbicides to control weeds along the Installation fenceline, railroad tracks, Runway 28 Right overrun and taxiways, and within improved areas. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission and force protection concerns at Niagara Falls ARS. This supplemental EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Resources that will be considered in the impact analysis are water and biological resources. The Draft Supplemental EA will be made available to the public upon completion.					
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Abbreviations and Acronyms

107 ARW	107th Air Refueling Wing
914 AW	914th Airlift Wing
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
ARS	Air Reserve Station
BOS	Base Operating Services
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cm	centimeters
CWA	Clean Water Act
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
IAP	International Airport
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IPMP	Integrated Pest Management Plan
mL	milliliters
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
SWPPP	Storm Water Pollution Prevention Plan
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

FINDING OF No SIGNIFICANT IMPACT (FONSI)
**Proposed Herbicide Application for Installation Fenceline, Railroad Tracks,
and Broadleaf Weed Control at Niagara Falls Air Reserve Station, New York**

INTRODUCTION

The 914th Airlift Wing (914 AW) of the United States Air Force (USAF) proposes to apply herbicide along the Installation fenceline and railroad tracks and broadleaf weed control at Niagara Falls Air Reserve Station (ARS), New York in accordance with the Integrated Pest Management Plan (IPMP). The Proposed Action, alternatives to the Proposed Action, and the No Action Alternative were assessed in a supplemental Environmental Assessment (EA). The supplemental EA is tiered to the *Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls Air Reserve Station, New York*, June 13, 2005.

The 914 AW is an Air Force Reserve Command (AFRC) unit, and is the host unit at Niagara ARS. The 914 AW is assigned eight C-130H aircraft which perform a diversity of roles, including airdrop of supplies, airlift support, aero-medical missions, and natural disaster relief missions.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to control weeds by applying herbicides in accordance with the Installation's approved IPMP. There are four areas that require herbicide application to control weeds: (1) 6 inches on both sides of the Installation fencelines (2) railroad tracks within the Installation property (3) taxiway and runway overruns, and (4) broadleaf weeds within the improved areas. In accordance with the Installation IPMP, the use of herbicides is limited and is applied only when necessary. The 914 AW has identified the need to control weeds along the Installation fencelines, railroad tracks, overrun and taxiway areas, and within the improved grounds at Niagara Falls ARS to address safety, security, and aesthetic concerns.

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action consists of applying herbicides to the Installation fenceline, railroad tracks, the overrun area at the end of Runway 28 Right, and mowed lawns within the Installation's improved areas. The herbicides that would be used include Roundup Pro™ or Kleenup Pro™, Triamine®, AM-40, and Barricade or equivalent herbicides as approved by the Niagara Falls ARS IPMP. The spring broadleaf weed control treatment in the improved lawn areas would use Dimension Ultra or an equivalent approved herbicide.

Along the Installation fenceline, the Installation would apply a combination of herbicides consisting of a pre-emergent and growth-retardant combination of herbicides (retards growth but does not turn weeds brown) in the spring (about April). A second application of a post-emergent would be applied in summer (about July). For the railroad tracks, overrun area at the end of Runway 28 Right, and taxiways the Installation would apply a herbicide mixture in the spring (about April) and in summer (about July) to eradicate existing vegetation and control emerging weeds using a combination of non-selective and pre-emergent herbicides. For the lawns in the improved areas, and in accordance with the approved IPMP to minimize the use of chemical herbicides, the broadleaf weed control would be applied approximately once every 2 years. As stated in the IPMP, the herbicides would not be applied near standing water, a stream, or wetland areas. The perimeter and security fence to be treated is approximately 26,660 feet, and the herbicide would be applied to an area 6 inches inside the fenceline (for a total of approximately 13,350 square feet).

The herbicides would be applied on the railroad track beds (to the width of the railroad tie, approximately 8 feet) that are within the Installation boundary. The railroad track beds are approximately 1,100 feet in length. Herbicide application would be directed to the width of the tie area and not to the rock berms around the tracks.

Broadleaf weed control would be applied to mowed lawns within the Installation's boundary in the improved area, but does not include areas adjacent to or around the runways or semi-improved areas north and west of Johnson Street. The improved area that would be treated is defined as the Installation property north and east to the fenceline, west to Johnson Street and the 107 ARW property, and south to the security fence. The total areas proposed for the herbicide application of the fencelines, railroad tracks, Runway 28 Right overrun and taxiways, and the improved lawn areas to be treated are approximately 0.306, 0.101, 1.77, and 55.6 acres, respectively.

SUMMARY OF ALTERNATIVES TO THE PROPOSED ACTION

Physical or cultural control measures are emphasized as the preferred methods and are applied first and then evaluated for effectiveness before the application of herbicides. Chemicals are only used if necessary and are always minimally applied, as required, to control the pest. Contractors cannot mow closer than about 6 inches from the fenceline or on the railroad tracks or the runways, and physical means of broadleaf weed control on mowed areas are not feasible. Therefore, no additional alternatives to the Proposed Action were identified for this EA analysis.

No Action Alternative. Under the No Action Alternative, there would be no change from existing conditions at the Installation. The current method of using manual or mechanical weed control along the fenceline, railroad tracks, and improved areas would continue under the No Action Alternative. The No Action Alternative would not address USAF mission and emergency response at Niagara Falls ARS.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED ACTION

Analysis performed in the EA addressed potential effects on water resources and biological resources. The analysis indicates that implementing the Proposed Action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

The elements of the Proposed Action were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. Copies of the supplemental EA and FONSI were mailed to Federal, state, and local agencies. A Notice of Availability for the supplemental EA and FONSI was published in the *Niagara Gazette* on January 26, 2006.

FINDINGS

Finding of No Significant Impact. Reasonable alternatives were considered. The Proposed Action was found to be the preferred alternative to meet the Installation's purposes and needs. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the CEQ regulations, and Environmental Impact Analysis Process (EIAP), 32 Code of Federal Regulations 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement (EIS) does not need to be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.


JAMES B. ROBERTS, JR., Col, USAF
Commander
Niagara Falls IAP-ARS
Niagara Falls, New York


Date

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
Proposed Herbicide Application for Installation Fenceline, Railroad Tracks,
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INTRODUCTION

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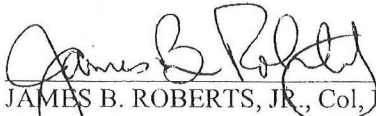
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JAMES B. ROBERTS, JR., Col, USAF
Commander
Niagara Falls IAP-ARS
Niagara Falls, New York

30 Mar 06
Date

COVER SHEET

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
HERBICIDE APPLICATION FOR INSTALLATION FENCELINE, RAILROAD TRACKS, AND BROADLEAF
WEED CONTROL AT
NIAGARA FALLS AIR RESERVE STATION, NEW YORK**

Responsible Agencies: U.S. Air Force (USAF), Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York.

Affected Location: Niagara Falls ARS, New York.

Proposed Action: Apply herbicide along the Installation fenceline, railroad tracks, overrun and taxiways, and broadleaf weed control at Niagara Falls ARS.

Report Designation: Supplemental Environmental Assessment (EA).

Written comments and inquiries regarding this document should be directed to: 914 MSG/CEV, Niagara Falls ARS, 2405 Franklin Drive, Niagara Falls, New York 14304-5063.

Abstract: The purpose of the Proposed Action is to control weeds at Niagara Falls ARS in accordance with the Integrated Pest Management Plan (IPMP) as necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The EA is tiered to the *Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls Air Reserve Station, New York*, June 13, 2005.

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HERBICIDE APPLICATION FOR INSTALLATION
FENCELINE, RAILROAD TRACKS, AND BROADLEAF
WEED CONTROL AT

NIAGARA FALLS AIR RESERVE STATION, NEW YORK

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1. Purpose and Need for Proposed Action

1.1 Background

The 914th Airlift Wing (914 AW) is an Air Force Reserve Command (AFRC) unit and is the host unit at Niagara Falls Air Reserve Station (ARS), New York. The 914 AW is assigned eight C-130H aircraft that perform diverse roles, including airdrop of supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Air Refueling Wing (107 ARW) of the New York Air National Guard (NYANG). The 107 ARW, assigned nine KC-135R tanker aircraft, primarily provides in-flight refueling for military aircraft operations worldwide.

On June 13, 2005, AFRC signed a Finding of No Significant Impact (FONSI) on the Environmental Assessment (EA) of the Niagara Falls ARS Integrated Pest Management Plan (IPMP). That EA evaluated the environmental impacts of the Installation's IPMP. This supplemental EA examines the potential impacts on the environment of site-specific activities that are consistent with the IPMP. In accordance with the Council on Environmental Quality (CEQ) regulations on implementing the National Environmental Policy Act (NEPA), this supplemental EA will be "tiered" to the *Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls International Airport-Air Reserve Station, New York*, June 13, 2005, which is incorporated herein by reference.

Tiering is one of the methods described by CEQ to help streamline the NEPA process, and reduce paperwork and delay. The CEQ regulations define tiering as "the coverage of general matters in broader Environmental Impact Statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basewide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared" (Title 40 Code of Federal Regulations [CFR] Part 1508.28).

This supplemental EA analyzes the Proposed Action and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a FONSI will be prepared. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues are identified that cannot be mitigated to insignificance, an EIS would be accomplished, or the Proposed Action would be abandoned and no action would be taken.

1.2 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to control weeds by applying herbicides in accordance with the Installation's approved IPMP. There are four areas that require herbicide application to control weeds: (1) 6 inches on both sides of the Base fencelines (2) railroad tracks within the Base property (3) taxiway and runway overruns, and (4) broadleaf weeds within the improved areas. In accordance with the Installation IPMP, the use of herbicides is limited and is applied only when necessary. The 914 AW has identified the need to control weeds along the Installation fencelines, railroad tracks, overrun and taxiway areas, and within the improved grounds at Niagara Falls ARS to address safety, security, and aesthetic concerns.

1.3 Location of the Proposed Action

Niagara Falls ARS is in Niagara County in western New York, approximately 6 miles east of the City of Niagara Falls and 20 miles north of the City of Buffalo. Adjacent communities include the towns of Niagara, Lewiston, and Wheatfield. Figure 1-1 shows the location of Niagara Falls ARS in relation to the surrounding region. Niagara Falls International Airport (IAP) is directly south of and contiguous to the Installation. The boundary between the airport and the Installation coincides with the channel of Cayuga Creek, which flows from east to west, south of the Installation flightline apron. The Installation occupies 985 acres of land north of Niagara Falls IAP. Vehicular access to Niagara Falls ARS is provided through the Main Gate, off Lockport Road.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

NEPA (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA mandated a structured approach to environmental impact analysis that requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

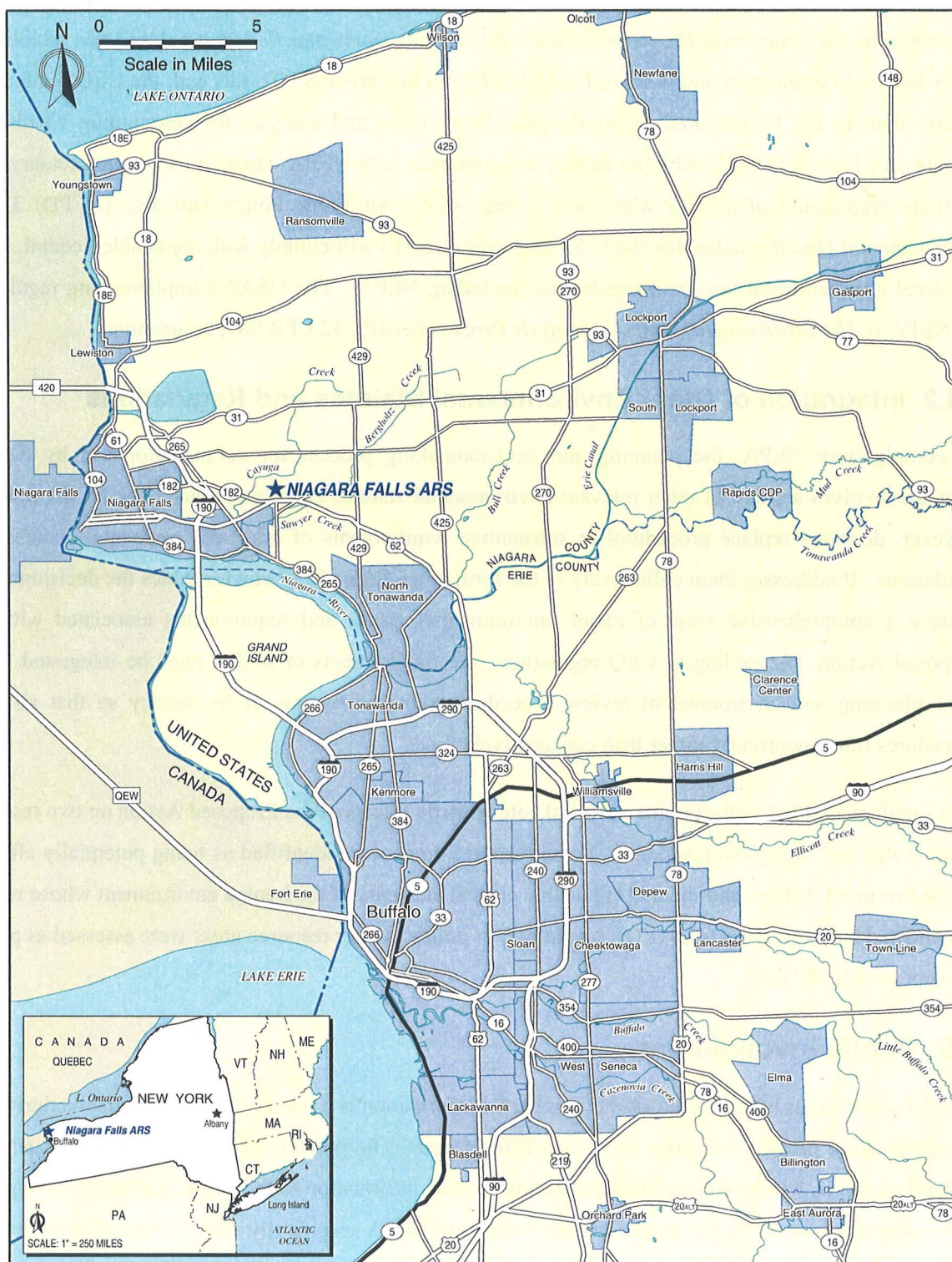


Figure 1-1. Niagara Falls ARS Vicinity Map

The process for implementing NEPA is codified in 40 CFR, Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. CEQ was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare an EIS or a FONSI, aid in an agency's compliance with NEPA when an EIS is unnecessary, and facilitate preparation of an EIS when one is necessary. Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the U.S. Air Force (USAF) will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *The Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”

This supplemental EA will examine potential, site-specific effects of the Proposed Action on two resource areas: water and biological resources. These resource areas were identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy. Other resource areas were assessed as part of the approved IPMP EA.

1.5 Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. CEQ regulations implementing NEPA specifically state, “There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to proposed actions. This process shall be termed scoping.”

The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. Air Force Instruction (AFI) 32-7060 requires AFRC to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements. Through the IICEP process, the 914 AW will notify relevant Federal, state, and local agencies; and the surrounding communities of the action proposed and provide them sufficient time to make known their environmental concerns specific to the action.

The public involvement process also provides AFRC the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. The 914 AW coordinated with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); and other Federal, state, and local agencies. Appendix A includes a copy of the letter mailed to the agencies for the draft EA and the distribution list. A copy of the draft EA was sent as an attachment to each person on the list and made available in community libraries to enhance the opportunity for public involvement.

A Notice of Availability for the draft EA was published in the *Niagara Gazette* on January 26, 2006. This is done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. A copy of the NOA was added to Appendix A of the EA.

1.6 Introduction to the Organization of this Document

This supplemental EA is organized into seven sections. Section 1 contains background information on Niagara Falls ARS, the purpose of and need for the Proposed Action, the location of the Proposed Action, a summary of environmental compliance requirements, a description of interagency coordination and community involvement, and an introduction to the organization of the EA. Section 2 provides a detailed description of the Proposed Action a description of the No Action Alternative, a description of the decision to be made, and identification of the preferred alternative. Section 3 describes the biophysical resources and baseline conditions that would be affected by the Proposed Action. Section 4 presents an analysis of the environmental consequences of each alternative, and Section 5 analyzes the potential cumulative impacts on Niagara Falls ARS. Section 6 lists the preparers of the EA, and Section 7 lists the sources of information used in the preparation of the document. Appendix A includes a copy of the IICEP letter mailed to the agencies for this action, the IICEP distribution list, and agency and public comments.

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2. Description of Proposed Action and Alternatives

2.1 Detailed Description of the Proposed Action

The Proposed Action would be conducted without interruption to Installation services. Figure 2-1 identifies the locations proposed for herbicide treatment. All waste generated as part of the Proposed Action would be disposed of by the BOS contractor according to all applicable regulations. The proposed projects would result in no change in officer, Reserve officer, enlisted Air Reserve Technician positions, or unit Reserve enlisted authorizations.

The Proposed Action consists of applying USEPA and New York State Department of Environmental Conservation (NYSDEC) registered herbicides to the Installation fenceline, railroad tracks, the overrun area at the end of Runway 28 Right, and mowed lawns within the Installation's improved areas (as shown in Figure 2-1). The herbicides that would be used include Roundup ProTM or Kleenup ProTM, Triamine®, AM-40, and Barricade or equivalent herbicides as approved by the Niagara Falls ARS IPMP. The spring broadleaf weed control treatment in the improved lawn areas would use Dimension Ultra or an equivalent approved herbicide.

2.1.1 Herbicide Description

Roundup ProTM or Kleenup ProTM. Both products are post-emergent (kill existing weeds, but won't prevent new ones) herbicides with glyphosate as the main active ingredient. Glyphosate is a nonselective herbicide used on many food and nonfood crops, as well as noncrop areas such as roadsides. When applied at lower rates, it serves as a plant growth regulator. The most common uses of Roundup ProTM and Kleenup ProTM include control of broadleaf weeds and grasses in hay/pasture, soybeans, field corn, ornamentals, lawns, turf, forest plantings, greenhouses, and rights-of-way.

Triamine®. Triamine® is a nonflammable stable solution containing a mixture of three herbicides 2,4-D Dimethylamine Salt (2,4-D), dichlorprop Dimethylamine Salt (2,4-DP), and mecoprop Dimethylamine Salt (MCPP). Triamine® is for use on ornamental turf lawns (residential, industrial, and institutional), parks, cemeteries, athletic fields, golf courses (fairways, aprons, tees, and roughs), and similar turf areas. Triamine® is a post-emergent selective broadleaf herbicide.

AM-40. AM-40's active ingredient is 2, 4-D. 2, 4-D is a colorless, odorless powder used as a selective pre-emergent (stops plant germination) or post-emergent herbicide for the control of broadleaf weeds in agriculture, and for control of woody plants along roadsides, railways, and utilities rights-of-way. It has been most widely used on such crops as wheat and corn, and on pasture and rangelands.

Barricade. Barricade controls susceptible weeds by preventing growth and development of newly germinated weed seeds. It is a selective pre-emergent herbicide that provides control of grass and broadleaf weeds in established turf grasses, lawns and sod, and hardwood seedling nurseries.

Dimension Ultra. As a turf herbicide, Dimension Ultra works on germinating seeds as well as young plants. The active ingredient in Dimension Ultra, dithiopyr enters the crabgrass plant through its roots, shoots, crowns, and leaves. It is the only crabgrass control that works both pre-emergent and early post-emergent as it has a wide enough application window to work in both periods.

2.1.2 Herbicide Application

Safety. The BOS contractor would be responsible for following ground safety, Occupational Safety and Health Administrations regulations, and Material Safety and Data Sheet (MSDS) recommendations. The contractor would be required to conduct work activities in a manner that does not pose any risk to workers or personnel. Procedures to ensure contractor safety are described in the Niagara Falls ARS IPMP EA in sections 3.2.2 and 4.3.2.

Herbicide Mixing. No herbicides would be stored at Niagara Falls ARS, nor there any mixing and loading of herbicides within the Installation boundaries. The BOS contractor would be responsible for storage, mixing, and loading of herbicides. Applying a tank mix of herbicides, or an herbicide and a liquid fertilizer, reduces time, labor, energy, and equipment costs. Table 2-1 lists a few of the proposed herbicide combinations and their proposed locations. All applicable directions, restrictions, and label precautions would be followed. The use of a combination of herbicides also enables a broader spectrum of weeds to be targeted with each application. The volumes of each herbicide used in combination would be established in accordance with USEPA recommendations, MSDS information, and manufacturer labels.

Application: Along the Installation fenceline, the Installation would apply a combination of herbicides consisting of a pre-emergent and growth-retardant combination of herbicides (retards growth but does not turn weeds brown) in the spring (about April). A second application of a post-emergent would be applied in summer (about July). For the railroad tracks, overrun area at the end of Runway 28 Right, and taxiways the Installation would apply a herbicide mixture in the spring (about April) and in summer (about July) to eradicate existing vegetation and control emerging weeds using a combination of non-selective and pre-emergent herbicides. For the lawns in the improved areas, and in accordance with the approved IPMP to minimize the use of chemical herbicides, the broadleaf weed control would be applied

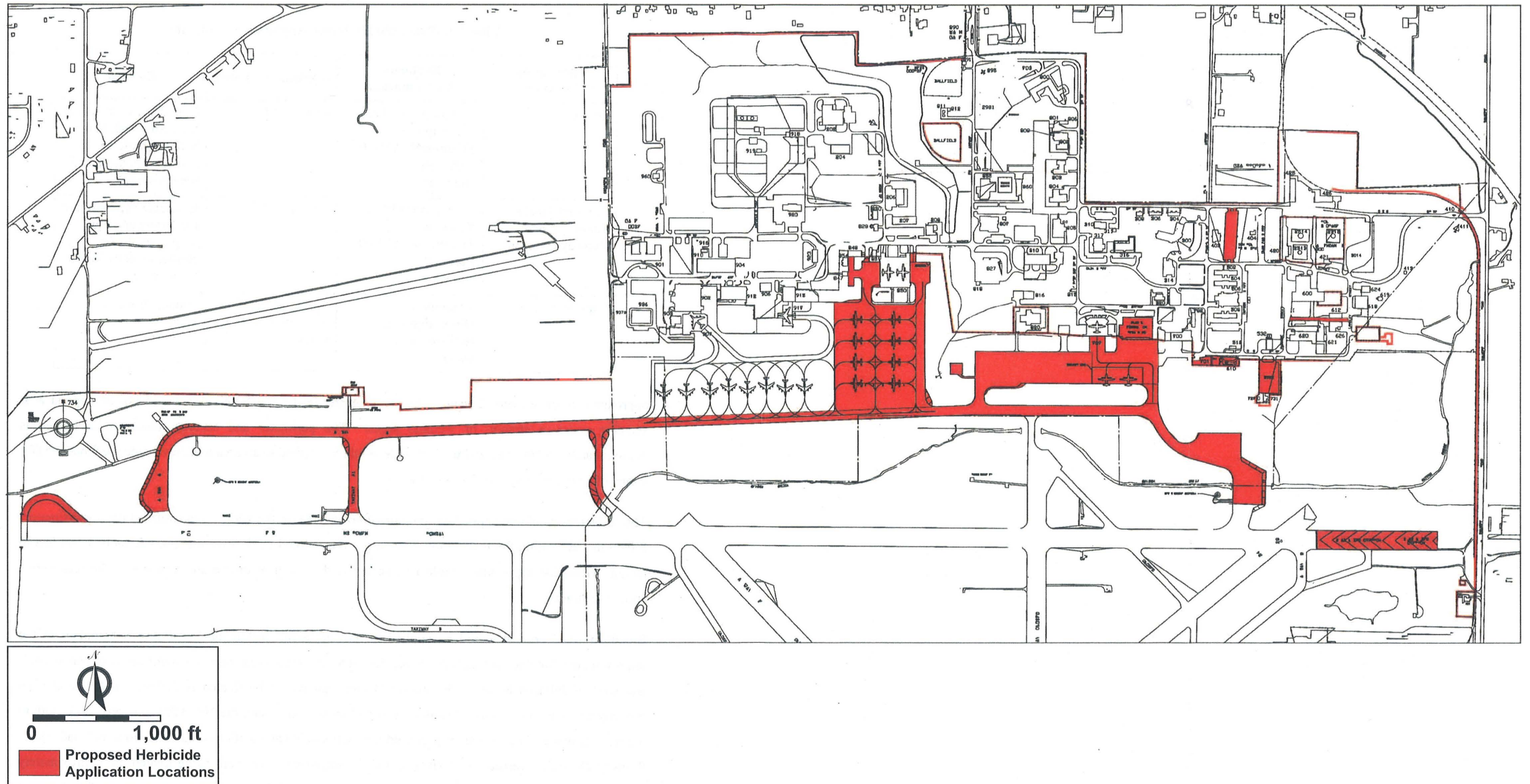


Figure 2-1. Niagara Falls ARS Proposed Project Locations

Table 2-1. Proposed Herbicide Application Summary

Application Location	Herbicide Combination	Application Times	Purpose
Fenceline	Roundup Pro TM or Kleenup Pro TM , Triamine®, AM-40, Barricade, and water	April and July	Retard weed growth in the spring and then help to eradicate resilient weeds later in the summer.
Railroad Tracks, Taxiways, and Runway Overruns	Roundup Pro TM or Kleenup Pro TM , Triamine®, AM-40, Barricade, and water	April and July	Eradicate vegetation in the spring and then help to eradicate resilient weeds later in the summer.
Improved Area	Triamine®, Dimension Ultra, fertilizer, and water	Spring application only, every two years.	Broadleaf weed control

approximately once every 2 years. As stated in the IPMP, the herbicides would not be applied near standing water, a stream, or wetland areas. The perimeter and security fence to be treated is approximately 26,660 feet, and the herbicide would be applied to an area 6 inches inside the fenceline (for a total of approximately 13,350 square feet).

The herbicides would be applied on the railroad track beds (to the width of the railroad tie, approximately 8 feet) that are within the Installation boundary. The railroad track beds are approximately 1,100 feet in length. Herbicide application would be directed to the width of the tie area and not to the rock berms around the tracks.

Broadleaf weed control would be applied to mowed lawns within the Installation's boundary in the improved area, but does not include areas adjacent to or around the runways or semi-improved areas north and west of Johnson Street. The improved area that would be treated is defined as the Installation property north and east to the fenceline, west to Johnson Street and the 107 ARW property, and south to the security fence. The total areas proposed for the herbicide application of the fencelines, railroad tracks, Runway 28 Right overrun and taxiways, and the improved lawn areas to be treated are approximately 0.306, 0.101, 1.77, and 55.6 acres, respectively. Figures 2-2 to 2-4 present examples of Installation fenceline, railroad tracks, and lawns that would be treated.



Figure 2-2. Example of Fenceline to be Treated



Figure 2-3. Example of Railroad Tracks to be Treated



Figure 2-4. Example of Improved Area to be treated for Broadleaf Weed Control

2.2 Alternatives

As part of the NEPA process, reasonable alternatives to the Proposed Action must be considered. The development of reasonable alternatives involved discussions with Niagara Falls ARS Installation and tenant personnel to identify the purpose and need of the action(s), alternative courses of action, designs, locations, and management practices for achieving each activity's purpose and need. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable project-specific alternatives and, from that, developing proposed actions that could be implemented in the foreseeable future. Management alternatives deemed infeasible were not analyzed further.

The Proposed Action would be conducted in accordance with the approved IPMP. The IPMP and EA emphasized the importance of the Integrated Pest Management philosophy, strategies, and techniques to manage vectors and pests (the term pest is used in the IPMP to describe such pests as insects and rodents, and weedy or undesirable plant species), while reducing pesticide risk and preventing pollution. The IPMP provides actions and guidelines to ensure that nonchemical control efforts will be used to the maximum extent possible before pesticides and herbicides are used. The overall strategy for the treatment of weeds is to use staged levels of response to control the weed growth, always using the minimum response necessary. Weed control is necessary for appearance (weeds can detract from the overall appearance of an area and collect litter), safety (weeds can interfere with visibility for road users and obscure traffic signs), and structural integrity (weed growth can destroy paving surfaces, force apart curbs, cause uneven slabs and broken tarmac, and crack walls, increasing maintenance costs).

Physical or cultural control measures are emphasized as the preferred methods and are applied first and then evaluated for effectiveness before the application of herbicides. Chemicals are only used if necessary and are always minimally applied, as required, to control the pest. The BOS contractor cannot mow closer than about 6 inches from the fenceline or on the railroad tracks or the runways, and physical means of broadleaf weed control on mowed areas are not feasible. Therefore, no additional alternatives to the Proposed Action were identified for this EA analysis.

2.3 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the Installation. The current method of using manual or mechanical weed control along the fenceline, railroad tracks, and improved areas would continue under the No Action Alternative. Weeds can be managed manually by pulling or cutting with hand tools. Manual techniques can be used in many circumstances, with relatively low environmental impacts and can be used under many weather and site conditions. Workers would walk along the fenceline, railroad tracks, and improved areas cutting target vegetation. The manual cost figure is two to five times as much as spot and localized herbicide costs. This cost difference is because manual control may require debris cleanup, while herbicide-sprayed weeds is usually left in place; and it is less labor-intensive to walk through an area spraying weeds (spot and localized herbicide treatments) than it is to walk through an area cutting down vegetation. Handheld weed trimmers would remain the primary method of mechanical weeds control along areas that are inaccessible to mowers. Mechanical methods are very effective for completely removing thick stands of vegetation. Mechanical weeds removal tends to be even more expensive than manual control due to the added cost of mechanical equipment purchase or rental and maintenance. The No Action Alternative would not address USAF mission concerns at Niagara Falls ARS. However, inclusion of the No Action Alternative is prescribed by the CEQ regulations and, therefore, will be carried forward for further analysis in the EA.

2.4 Decision to be Made and Identification of Preferred Alternative

The 914 AW would make one of the following decisions:

- Implement the Proposed Action
- Do not implement the Proposed Action (No Action Alternative)

The Preferred Alternative is the implementation of the Proposed Action as selected by the 914 AW.

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3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the proposed construction projects. This section provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential direct and indirect environmental impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ regulations, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially affected by the Proposed Action. Nine aspects of the affected environment that are frequently evaluated in an EA (noise, land use, air quality, safety, cultural resources, geological resources, infrastructure, socioeconomics and environmental justice, and hazardous materials and waste) would not be affected by the Proposed Action, which is a supplement to the approved IPMP, and therefore, are not analyzed further in this EA.

3.1 Water Resources

3.1.1 Definition of the Resource

Water resources that might be affected by the Proposed Action include groundwater, surface water and storm water, and wastewater systems. Evaluation identifies the quantity and quality of the resource and the demand on the resource for potable, irrigation, and industrial purposes.

Groundwater. Groundwater consists of the subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Water and Storm water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water flows, which can be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to management of surface water. Storm water is also important to surface water quality because of the potential to introduce sediments and other contaminants into lakes, rivers, and streams.

Storm water systems convey precipitation away from developed sites to appropriate receiving surface waters. For a variety of reasons, storm water systems might employ a variety of devices to slow the

movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources in that habitat. Storm water systems provide the benefit of reducing amounts of sediments and other contaminants that would otherwise flow directly into surface waters. Failure to appropriately size storm water systems to either hold or delay conveyance of the largest predicted precipitation event will often lead to downstream flooding and the environmental and economic damages associated with flooding. As a general rule, higher densities of development, such as are found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban centers.

Wastewater. Wastewater treatment systems might treat sanitary sewer, industrial, or both kinds of wastes. Most systems are publicly owned treatment works. Wastewater treatment systems consist of a central treatment plant and a collection system of piping from waste sources. Wastewater treatment plants operate under National Pollutant Discharge Elimination System (NPDES) permits issued by USEPA or the states pursuant to the Clean Water Act (CWA). Key issues concerning wastewater systems typically involve the age of the system (either its collection system and infiltration/inflow problems or the treatment plant itself), the capacity of a treatment plant (usually expressed in millions of gallons per day), and a treatment plant's record of violations of its NPDES permit.

3.1.2 Existing Conditions

The water resources information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998), Integrated Natural Resources Management Plan (AFRC 1998), and Storm Water Pollution Prevention Plan (SWPPP) (NFARS 2002), unless otherwise cited.

Groundwater. The aquifers of the Lake Erie-Niagara River Basin are primarily carbonate-rock aquifers, characteristic of the Central Lowland Province of western New York. The aquifers typically produce only small to moderate amounts of water to wells. Water is stored and moves mainly in secondary fractures. Minerals in solution are calcite, dolomite, gypsum, and halite, resulting in hard and salty groundwater. Much of the groundwater contains sulfate and chloride ions in excess of 250 milligrams per liter, so quality of water is poor and deteriorates further with depth. Groundwater must be treated for most uses. Niagara Falls ARS has no active potable water wells.

Surface Water and Storm Water. The major surface water feature at Niagara Falls ARS is Cayuga Creek (as shown in Figure 3-1). Cayuga Creek enters the Installation from the east and flows west along the southern border of the Installation, dividing the ARS from the IAP. Ultimately, the Cayuga Creek drains

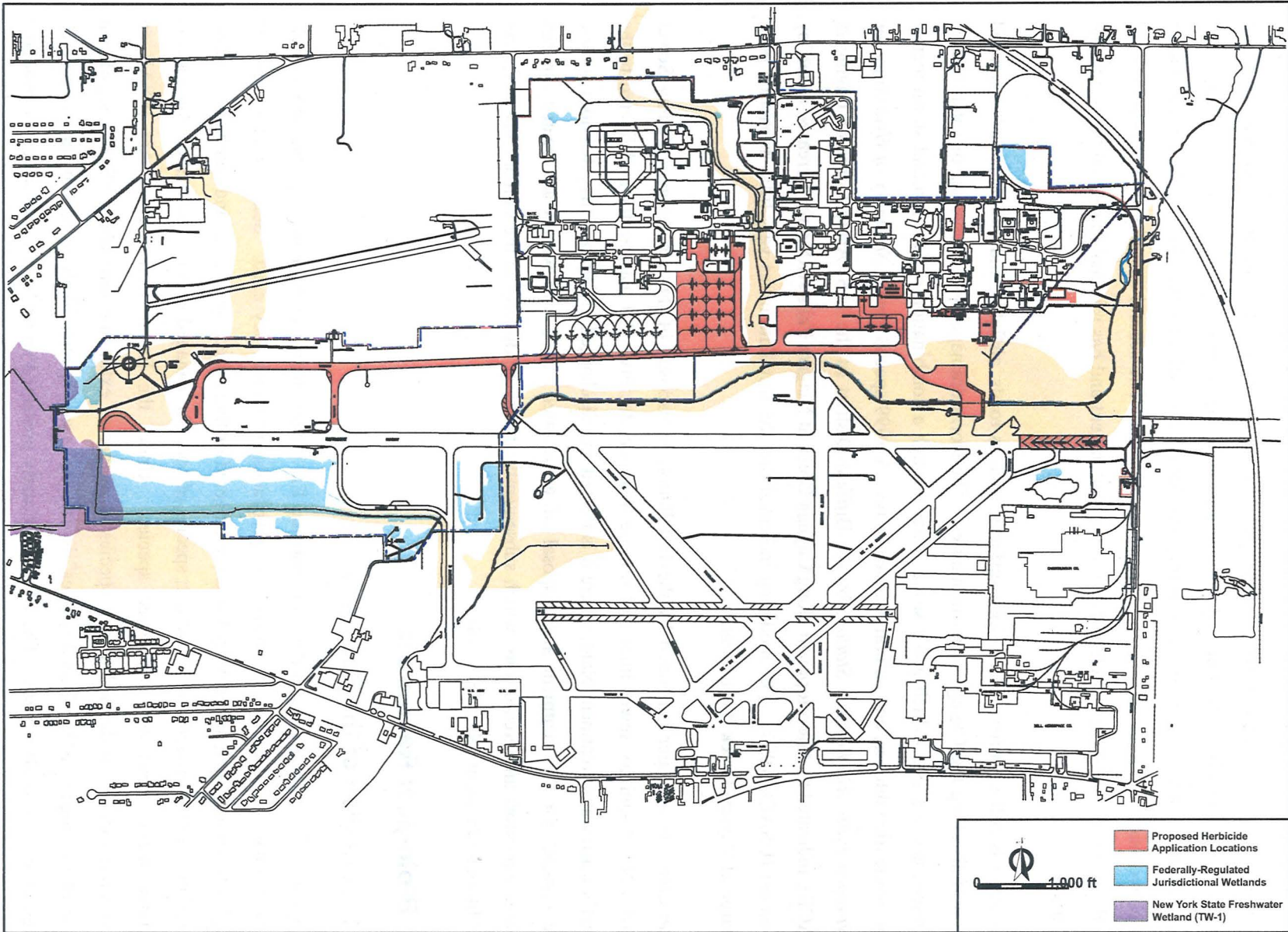


Figure 3-1. Proposed Herbicide Application Locations and Wetlands on Niagara Falls ARS

into the Niagara River, upstream of the American and Horseshoe Falls, as part of the Lake Erie-Niagara River Basin. Two unnamed artificial tributaries of Cayuga Creek are other important surface water features at Niagara Falls ARS. One tributary originates in the northwest portion of the Installation and flows south through the center of the Niagara Falls ARS. This tributary functions as the primary storm water conveyance, draining half of the Installation's acreage. The second tributary flows north to south along the western end of the airfield outside of the cantonment and has minimal impact on the rest of the Installation.

Storm water is collected from impervious surfaces, such as roads, airfields, and buildings and channeled to six outfalls along the Cayuga or its tributaries. The storm drainage system consists of catch basins, curb inlets, and culverts, which guide storm water through a combination of underground storm mains, human-made tiled ditches, and natural drainage ways. A 1999 special report, *Summary of Hydrology for the Niagara Falls Air Reserve Station*, by the Buffalo District of the U.S. Army Corps of Engineers (USACE), indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent (USACE 1999). The modeling indicated that the Installation has very little impact on peak discharge of Cayuga Creek downstream.

Wastewater. Wastewater generated by the Installation is disposed of through Niagara County Sewer District's No. 1 sanitary sewer lines and sewage treatment facility. All wastewater is delivered to the District's wastewater treatment plant, where it is treated and discharged. Niagara Falls ARS does not use septic systems for the treatment and disposal of wastewater. Industrial wastes are treated through oil/water separators and grease traps which subsequently discharge directly to the sanitary sewer system for additional treatment (NFARS 1998).

3.2 Biological Resources

3.2.1 Definition of the Resource

Biological resources analyzed in this supplemental EA include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they exist. Sensitive and protected biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species of concern managed under Conservation Agreements or Management Plans; and state-listed species. Under the Endangered Species Act (ESA), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS recently presented an updated list of species considered

candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

Wetlands are important natural systems and habitats because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat and unique flora and fauna niche provisions, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the “waters of the United States” under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.” In addition, EO 11990, *Protection of Wetlands*, directs Federal agencies to avoid destruction or modification of wetlands whenever there is a practicable alternative.

Wetlands are protected in New York State under Article 24 of the New York Environmental Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special circumstances). The Act protects the wetland and 100 feet of protective buffer surrounding it (AFRC 1998).

3.2.2 Existing Conditions

Vegetation. Most of Niagara Falls ARS is urbanized and the original vegetation has been removed or significantly altered by development, construction, landscaping, and other disturbances. Turf grasses and various broadleaf weeds are the dominate vegetation types on Niagara Falls ARS. There have been no observations made of any historically significant or unique native vegetative species occurring on the Installation. Grassland communities are the predominate habitat on the Installation which support numerous ground-nesting birds, such as the meadowlark, grasshopper sparrow, and upland sandpiper. The NYSDEC has indicated that the Installation’s grassland habitat has regional importance for supporting a variety of grassland bird species. Wetland communities, although limited, are another habitat type on the Installation, and are the preferred habitat for the majority of the freshwater wading bird populations in Western New York (AFRC 1998).

Wildlife. Common mammals on Niagara Falls ARS include the beaver (*Castor Canadensis*), coyote (*Canus lutrans*), deer mouse (*Peromyscus maniculatus*), eastern cottontail rabbit (*Sylvilagus floridanus*),

meadow vole (*Microtus pennsylvanicus*), muskrat (*Ondatra zibethica*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), whitetail deer (*Odocoileus virginianus*), and woodchuck (*Marmota monax*) (NFARS 2001).

The most abundant native birds in the area include the red-winged black bird (*Agelaius phoeniceus*), European starling (*Sturnus vulgaris*), song sparrow (*Melospiza melodia*), gulls (*Larus* spp.), eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), rock dove (*Columbia livia*), mourning dove (*Zenaida asiatica*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and great blue heron (*Ardea herodias*). During winter months, the mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), Canada goose (*Branta canadensis*), and great blue heron (*Ardea herodias*) are observed on the Installation (NFARS 2001).

The eastern garter snake (*Thamophis sirtalis*), midland painted turtle (*Chrysemys picta marginata*), northern leopard frog (*Rana pipiens*), snapping turtle (*Chelydra serpentina*), and wood frog (*Rana sylvatica*) are herptofauna commonly found on Niagara Falls ARS (NFARS 2001).

The fisheries habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries. Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in relation to their regional ability to support aquatic species (AFRC 1998).

Sensitive Species. No federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the Installation. Two species might migrate through the Installation: the bald eagle (*Haliaeetus leucocephalus*) and piping plover (*Charadrius melodus*). Table 3-1 lists Federal- and state-listed threatened and endangered species that occur in the vicinity of the Installation. Threatened and endangered species on Niagara Falls ARS are identified by one of the following categories: *occurs*, *migrates through*, or *historic range*. The term *occurs* refers to a species inhabiting the Installation on a continuing basis. The term *migrates through* refers to a species inhabiting the Installation on an indiscriminate basis. The term *historic range* is used when Federal and state agencies are unable to confirm the presence of a species on the Installation due to insufficient data, but where historical information indicates that the species previously inhabited or migrated through the area.

A 2001 inventory conducted by the USFWS found and confirmed six New York State-listed bird species on the Installation. These are the upland sandpiper (*Bartramia longicauda*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), grasshopper sparrow (*Ammodramus savannarum*), American bittern (*Botaurus lentiginosus*), and horned lark (*Eremophila alpestris*) (NFARS 2001).

Table 3-1. Threatened and Endangered Species Occurring on or in the Vicinity of Niagara Falls ARS

Common Name/Scientific Name	Status		Presence on Niagara Falls ARS
	Federal	State	
Birds			
American bittern/ <i>Botaurus lentiginosus</i>	NL	SC	occurs
American Peregrine falcon/ <i>Falco peregrinus anatum</i>	NL	E	migrates through
Bald eagle/ <i>Haliaeetus leucocephalus</i>	T	T	migrates through
Common nighthawk/ <i>Chordelles minor</i>	NL	SC	migrates through
Common tern/ <i>Sterna hirundo</i>	NL	T	migrates through
Grasshopper sparrow/ <i>Ammodramus savannarum</i>	NL	SC	occurs
Henslow's sparrow/ <i>Ammodramus henslowii</i>	NL	T	historic range
Horned lark/ <i>Eremophila alpestris</i>	NL	SC	occurs
Loggerhead shrike/ <i>Lanius ludovicianus</i>	NL	E	historic range
Northern harrier/ <i>Circus cyaneus</i>	NL	T	occurs
Piping plover/ <i>Charadrius melodus</i>	T	E	migrates through
Red-shouldered hawk/ <i>Buteo lineatus</i>	NL	SC	migrates through
Short-eared owl/ <i>Asio flammeus</i>	NL	E	occurs
Upland sandpiper/ <i>Bartramia longicauda</i>	NL	T	occurs
Vesper sparrow/ <i>Pooecetes gramineus</i>	NL	SC	historic range
Amphibians/Reptiles			
Eastern box turtle/ <i>terrapene Carolina</i>	NL	E	occurs
Northern cricket frog/ <i>Acris crapitans</i>	NL	E	historic range
Mammals			
Allegheny woodrat/ <i>Neotoma floridana</i>	NL	E	historic range
Indiana bat/ <i>Myotis sodalist</i>	E	E	historic range

Source: AFRC 1998, NYSDEC 2004a

Notes:

E: Listed as Endangered

T: Listed as Threatened

SC: NYSDEC Species of Concern

NL: Not listed

Several other transient species might periodically use the Installation for roosting or foraging. Under Part 182 of the New York State Environmental Conservation Law, an "Endangered Species" is defined as any native species in imminent danger of extirpation or extinction in New York, or a species that is federally listed as endangered. A "Threatened Species" is defined as any native species likely to become

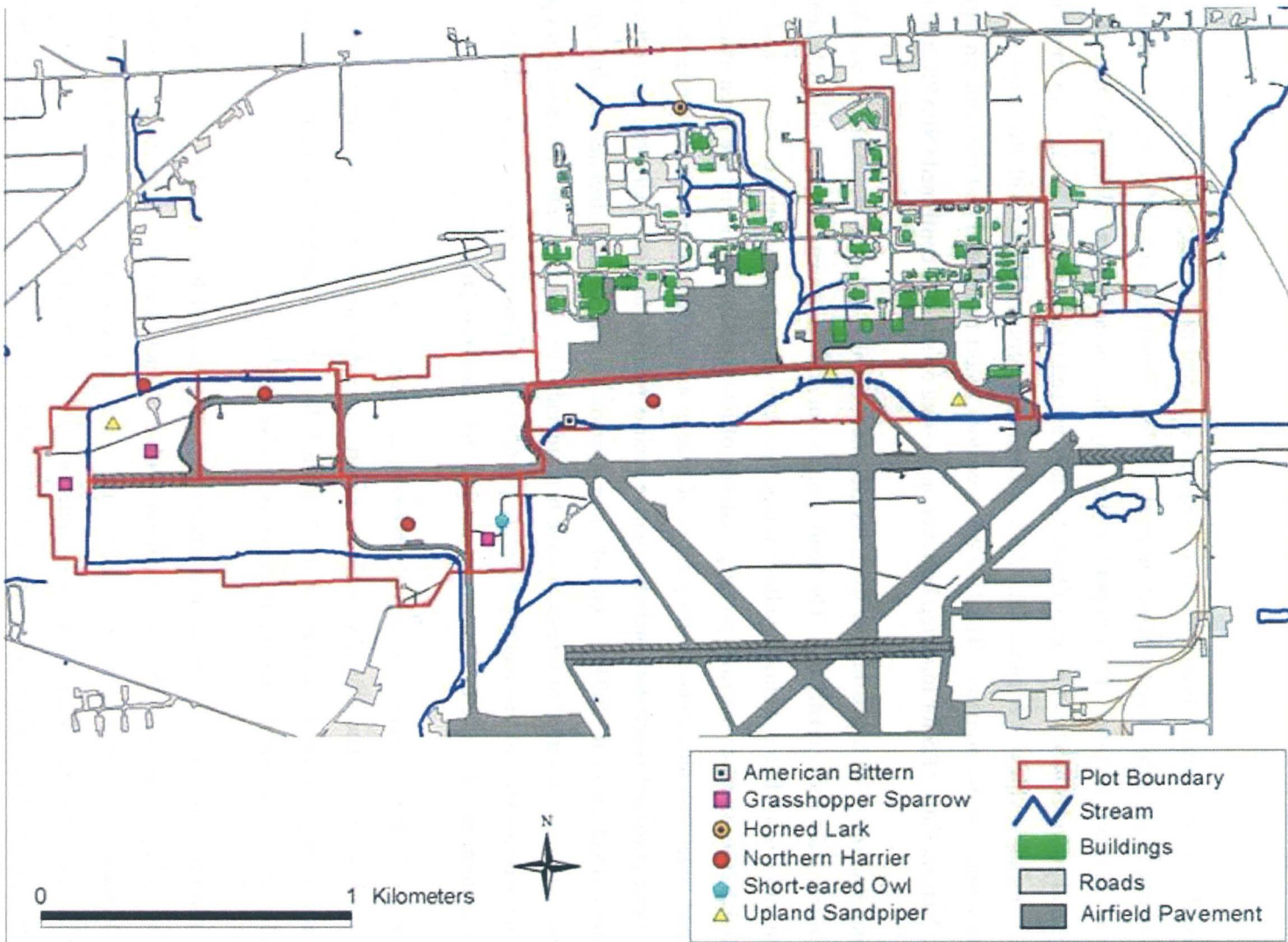
endangered in New York within the foreseeable future, or a species that is federally listed as threatened (AFRC 1998).

Upland Sandpiper. Formerly known as the upland plover, the upland sandpiper is a slender, moderate-sized shorebird with a small head; large “shoe-button” eyes; short and thick dark brown bill; long, thin neck; long, yellowish legs; and a relatively long tail. The upland sandpiper inhabits open expanses of grassy fields, hay fields, and mown grassy strips adjacent to runways and taxiways of airports and military installations. The upland sandpiper is currently experiencing population decline over much of its range, particularly in the Midwest and the eastern United States. Upland sandpipers require large home ranges (Dechant, et al. 2003a). Surveys for the USFWS inventory made several sightings of this species (see Figure 3-2).

Upland sandpipers were observed in survey plots near the runway. On one occurrence, two adults were displaying territorial behavior while one fledgling (unable to fly) continued to run away from the observers. No nest was found; however, repeated sightings during the breeding season suggest breeding activity on the Installation (NFARS 2001).

Short-eared Owl. Short-eared owls are medium-size owls with small ear tufts that appear as two ridges along the top of the head. They have round, beige facial disks similar to those of barn owls (NYSDEC 2004b). Short-eared owls generally nest on the ground on dry uplands, but wetter lowlands, such as peat bogs and wetlands are occasionally used. Nests were usually in areas with vegetation 30 to 60 centimeters (cm) (11.8-23.6 inches) high and 2- to 8-year-old residual vegetation (Dechant, et al. 2003b). In general, airports such as the Niagara Falls ARS provide the required openness and grassland habitat that attracts the short-eared owl for foraging, resting, roosting, and breeding (NFARS 2001). Surveys for the USFWS inventory observed six short-eared owls in 1998 in one survey plot near the runway (see Figure 3-2). These were the only sightings of this species during the survey; however, additional winter sightings have been reported on and adjacent to the Niagara Falls ARS. The USFWS inventory report suggested that the short-eared owl utilizes the Niagara Falls ARS, as well as adjacent lands, for overwintering or migratory stopover habitat (NFARS 2001).

Northern Harrier. The northern harrier, formerly known as the marsh hawk, is a 41- to 61-cm (16- to 24-inch), slender-bodied hawk that has a long tail and wings, long yellow legs, distinct facial disks, and a conspicuous white rump patch (Dechant et al. 2003c). Northern harriers usually return to the same area to nest. The nest is built on the ground, often near low shrubs. Northern harriers prefer relatively open



Source: NFARS 2001

Figure 3-2. Locations of State-Threatened and -Endangered Species and Species of Concern Found on Niagara Falls ARS

habitats characterized by tall, dense vegetation, and abundant residual vegetation. They use native or tame vegetation in wet or dry grasslands, fresh to alkali wetlands, lightly grazed pastures, croplands, fallow fields, old fields, and brushy areas. Although cropland and fallow fields are used for nesting, most nests are found in undisturbed wetlands or grasslands dominated by thick vegetation (Dechant et al. 2003c).

Historic populations of northern harriers were considered abundant and widespread. However, declines have been observed in recent decades (Dechant et al. 2003c). Protection of suitable habitat is the most vital need of northern harriers. It is important that any management plan allows for healthy prey populations and provides habitats that are suitable for them as well (Dechant et al. 2003c). An abundance of prey (e.g., meadow voles) at Niagara Falls ARS provides the northern harrier with the supplementary mainstay to remain on the property. The USFWS inventory report concluded that the northern harrier utilizes the Niagara Falls ARS for foraging; however, no nesting on site was confirmed (NFARS 2001).

Grasshopper Sparrow. Adult grasshopper sparrows are small, chunky, and gray-brown above, with buffy sides and breast and a short, bristly tail. The head appears flat and the crown is dark, with a pale central stripe. The bird has a white eye-ring; a yellow-orange spot can often be seen between the eye and beak (CDEP 2004a). Grasshopper sparrows prefer grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Grasshopper sparrows breed in both native and tame grassland vegetation, including native prairie, pasture, hayfields, airports, and reclaimed surface mines (Dechant et.al. 2003d). Grasshopper sparrows have steadily declined as dry, grassy uplands and farms have reverted to forests or have been replaced by developments. Protection of open, grassland areas is essential to maintaining breeding populations of grasshopper sparrows. Maintaining fields and remaining at a distance from nests can also help this species (CDEP 2004a).

Surveys for the USFWS inventory observed grasshopper sparrows on several survey plots near the runway (see Figure 3-2). The USFWS inventory report concluded that repeated sightings during the breeding season suggest breeding activity on the Niagara Falls ARS and that the grassland areas on the Niagara Falls ARS provide quality habitat for this species (NFARS 2001).

American Bittern. This large heron is most often seen when flushed from marshes. Its most easily identified by its large size—up to 34 inches tall and with a 50-inch wingspan—and its streaked brown plumage (Dechant et al. 2003e). American bitterns nest in marshes across the northern United States and southern Canada. The American bittern is a common bird of the marshlands, but is seldom seen. American bitterns avoid annually burned, mowed, heavily grazed, and tilled areas. The American bittern

is considered threatened because of the continuing disappearance of the wetland habitats it needs to exist. Areas where American bitterns regularly nest need to be identified and, where possible, protected from development (Dechant et al. 2003e). Surveys for the USFWS inventory observed the American bittern once in a survey plot near Cayuga Creek (see Figure 3-2). The USFWS inventory report concluded that this limited sighting indicates infrequent, transient use by the species (NFARS 2001).

Horned Lark. The brownish horned lark is best identified by its very distinctive head pattern: black “horns” (feather tufts), a white or yellowish face and throat, a broad black stripe under the eye, and a black bib. Horned lark populations have steadily declined as dry, open uplands have reverted to forests or have been destroyed by development. As with other ground-nesting birds, high populations of predators, such as raccoons, skunks, and housecats, have also contributed to the decline of this species. Protection of open grassland and agricultural areas is essential to conserving breeding populations of horned larks. Maintaining fields, both inland and along coastlines, and keeping a safe distance from horned lark nests will help protect this species (CDEP 2004b).

Wetlands. An emergent marsh/shrub wetland covering 72 acres west of the Niagara Falls IAP main runway was delineated in 1992 by the NYSDEC. A small portion of this New York State wetland is on Niagara Falls ARS property. Currently, Niagara Falls ARS has a permit (Permit 90-87-0946) from NYSDEC for management of this wetland area and its 100-foot buffer west of Runway 10L-28R. This permit allows the 914 AW to remove emergent trees and brush and to periodically mow approximately 4 acres of the wetland and its 100-foot buffer zone within the Installation boundaries (AFRC 1998).

A July 1997 survey of the acreage at Niagara Falls ARS identified approximately 38 acres of Jurisdictional Wetlands or Waters on the Installation. In October 2002, the USFWS performed a reevaluation of wetland boundaries and assessment of wetland values and functions on Niagara Falls ARS (USFWS 2003). The wetlands were mapped in similar locations to those mapped in the 1997 survey, though the exact location of the boundaries had shifted. This shift could be due to differences in the time of year the survey was conducted, ongoing maintenance and development on the Installation, and meteorological conditions (severe drought conditions were encountered during the 2002 survey) (USFWS 2003). Research and field delineation revealed that there are currently nine Federal jurisdictional wetlands covering approximately 37.47 acres on Niagara Falls ARS. Figure 3-1 shows the locations of the Federal and state wetland areas at Niagara Falls ARS.

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4. Environmental Consequences

Section 4 presents an evaluation of the environmental impacts that might result from implementing the Proposed Action, alternatives, or the No Action Alternative. This section focuses on impacts considered potentially significant. The general approach followed throughout this section is to describe briefly the range of impacts that would occur and then provide a discussion of impacts that are considered significant. Significance criteria for most potential impacts were obtained from standard criteria; Federal, state, or local agency guidelines and requirements; or legislative criteria. Long-term implications of the Proposed Action are also presented in this section. The significance of an action is measured in terms of its context and intensity. The extent to which a proposed action might affect an environmental resource depends on many factors.

4.1 Water Resources

4.1.1 Significance Criteria

Significance criteria for water resources impacts are based on water availability, quality, and use; and associated regulations. A potential impact on water resources would be significant if it were to result in one of the following scenarios:

- Reduce water availability to existing users or interfere with the supply.
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources.
- Adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

4.1.2 Proposed Action

Groundwater. Use of herbicides has the potential for minor long-term direct adverse effects on groundwater from spills during mixing or loading. There are no potable water wells on the Installation. Thus, under the Proposed Action, no herbicides would be applied near drinking water sources and would not impact drinking water at the Installation.

The glyphosate in Roundup Pro™ and Kleenup Pro™ is strongly adsorbed to soil, with low potential to move through soil to contaminate groundwater. Microbes in the soil readily and completely degrade it even under low temperature conditions. It tends to adhere to sediments when released to water. The herbicide is readily degraded over time by soil microbes into natural substances such as carbon dioxide.

Triamine®, AM-40, and Barricade have greater potential to contaminate groundwater. The herbicides have a short half life of approximately 10 days and are readily degraded into nontoxic substances by soil microbes and aquatic microorganisms. Leaching to groundwater can occur in coarse-grained sandy soils with low organic content or with very basic soils. In general little runoff occurs with 2, 4-D or its amine salts. Most cases of groundwater contamination involving phenoxy herbicides such as Triamine®, AM-40, and Barricade have been associated with mixing/loading and disposal sites. Caution would be exercised when handling phenoxy herbicides at such sites to prevent contamination of groundwater supplies.

Dimension Ultra binds tightly to soil particles and has low water solubility so it is not likely to move or leach into groundwater. This combination of properties demonstrates that the active ingredient in Dimension Ultra is essentially immobile in soil and stays in place until degraded by chemical and microbial action. Dimension Ultra is also applied at very low use rates relative to many other turf herbicides. Thus there is little chance of groundwater becoming contaminated when Dimension Ultra turf herbicide is used according to label directions.

Herbicide application would occur only at designated areas on the Installation using best management practices to lower the potential for runoff of herbicide residue into surface water bodies. No mixing and loading of herbicides would occur within the Installation boundaries. The BOS contractor would be responsible for storage, mixing, and loading of herbicides. Best management practices would be used to avoid spilling or applying herbicides to aquatic areas that might disrupt aquatic ecosystems. If an accidental spill occurs on the Installation, the BOS contractor would collect the material and dispose of it by following disposal instructions on the label. Application methods, weather conditions, and timing are other important criteria to consider for reduction of surface water contamination. Under the IPMP, the Niagara Falls ARS would only use herbicides around aquatic systems that have been labeled by USEPA to be safe for such conditions.

Surface Water and Stormwater. The application of herbicides would have a negligible adverse impact on water quality with the use of proper application practices. In addition, the use of buffers around surface water bodies would further reduce the possibility movement of herbicides into water resources from drift or storm water runoff.

The greatest concentration of herbicide would be Monsanto Roundup Pro™ and Kleenup Pro™, whose active ingredient is glyphosate. Glyphosate can enter surface water through three routes—direct application to aquatic vegetation, binding to soil that washes off treated terrestrial sites, or through drift

from treated areas near water. Since herbicides would not be used on aquatic vegetation, that method will not be discussed in detail. Through terrestrial applications of glyphosate, it is expected that a small amount of the applied herbicide might enter surface waters indirectly through storm water runoff or attached to soil particles that wash off treated fields. Roundup Pro™ and Kleenup Pro™ residues in water resulting from such wash-off are typically seasonal and dissipate over time. In sediment, glyphosate is degraded over time by microorganisms. When glyphosate applications are made near water, it is possible that a small percentage of sprayed material could reach the water during application. Once in contact with surface water, glyphosate is removed by binding to sediment and microbial degradation. Glyphosate has a half-life of less than seven days in water and no significant bioaccumulation would be expected. The application of Roundup™ or Kleenup Pro™ directly to surface water is prohibited.

Triamine®, AM-40, and Barricade would also not be applied directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Care would be taken not to contaminate water used for irrigation or domestic purposes. Dimension Ultra might be toxic to fish and would not be applied directly to water or in a way such that it would move immediately into water. However, the strong absorption qualities of the compound in soil and plants, its low use rate, and its low water solubility indicate that in normal turf applications there is minimal potential for surface runoff directly into water from treated areas.

Wastewater. The Proposed Action would not affect the wastewater system at Niagara Falls ARS. No wastes would be generated from this proposed action that would impact the sanitary sewer system. The contractor who is responsible for applying the herbicides would not be allowed to rinse or wash equipment on the Installation and would not be allowed to use the sanitary sewer system to dispose of any wastes. Empty containers shall be disposed of in accordance with 6 New York Conservation Rule and Regulation Section 325.4.

4.2 Biological Resources

4.2.1 Significance Criteria

This section evaluates the potential impacts on biological resources under the Proposed Action and alternatives. The significance of impact on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological ramifications. This EA will use a habitat perspective to provide a framework for analysis of general classes of effects (e.g. removal of critical habitat, noise

associated with training, human disturbance). The impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas. Impacts are also considered significant if disturbances cause reductions in population size or distribution of a species of high concern, such as state-listed sensitive species.

4.2.2 Proposed Action

Vegetation. The Proposed Action involves the application of selective and nonselective herbicides in accordance with the Niagara Falls ARS IPMP directive of using nonchemical control efforts to the maximum extent possible before applying herbicides (herbicides are only used if necessary and are always minimally applied, as required, to control the pest). The Proposed Action would have a direct impact on target vegetation (weedy species and/or grasses growing in undesired locations) by killing or slowing the growth of the target species. There would be an indirect, beneficial impact on nontarget vegetation (desired grasses within the improved grounds during broadleaf control) by allowing them to better compete with the target species. When Roundup Pro™ and Kleenup Pro™ are sprayed on plant foliage, they are absorbed and then translocated throughout the plant's tissues. Once inside the plant, glyphosate inhibits the production of an enzyme, called EPSP synthase, which in turn prevents the plant from manufacturing certain aromatic amino acids essential for plant growth and life. Glyphosate interrupts the metabolic process in plants, so its effect might not be visible for about 4 days in annual plants and up to 7 days in perennial plants. After application, the plant wilts and turns yellow, and then turns brown as the plant tissue deteriorates. At the same time, glyphosate decomposes the plant's underground roots and rhizomes.

Ultimately, the entire plant dies, is incapable of regenerating, and enriches the soil as it decomposes. Tests have shown that Roundup Pro™ and Kleenup Pro™, when used according to label directions, have no weed killing activity once in contact with the soil. Glyphosate will not move in or on the soil to affect nontarget vegetation, and it does not move through the soil to enter other nontarget plants by the root system. Glyphosate is only effective when it comes into contact with the green, growing parts of plants. Other tests have shown that glyphosate binds tightly to most soil particles until it is degraded. Glyphosate has a half-life between two and 174 days and is mainly degraded by micro-organisms present in soil. Because glyphosate binds to soil until it is degraded, the likelihood that Roundup Pro™ and Kleenup Pro™ would harm nearby plants is negligible.

Triamine® and AM-40 are considered selective systematic herbicides. They act as growth regulators. The salts in the herbicide are rapidly absorbed by the roots and the ester compound by the foliage. After absorption, the herbicide bends and twists the stems, then causes swelling and leaf cupping, followed by

wilting and death. The three components of Triamine® each have a different half-life, the ranging from six to 17 days. The active ingredients in Triamine® are readily degraded by soil microbes and aquatic microorganisms. This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. AM-40 has a low persistence in soil with a half-life of six to nine days and is readily degraded into nontoxicological substances. As with Triamine®, microbial degradation is the primary route of AM-40 breakdown in soil. Barricade is a pre-emergent herbicide that is absorbed primarily by emerging shoots. It then acts as a microtubule assembly inhibitor. Barricade is persistent and immobile in soil and stable in water but does not bioaccumulate.

The active ingredient in Dimension Ultra, dithiopyr, enters the crabgrass plant through its roots, shoots, crowns, and leaves. The major site of physiological activity is within developing plant tissues found in the growing points. The mode of action is inhibition of mitotic cell division, or the inhibition of cell development and growth. Dithiopyr enters susceptible plants through the crowns, roots, shoots, and leaves, and therefore is effective at many stages of crabgrass growth. For activity to occur, Dimension Ultra must come in contact with young, exposed plant meristems in roots and shoots. Thus the herbicide is selective between surface germinating weeds such as crabgrass and the safety to established turfgrasses. Dimension Ultra exhibits weed control through inhibition of cell division. Dithiopyr's half life in soil is 17 to 61 days and dissipates almost completely in one year. The transport of chemicals from the decomposition of plant matter after plant destruction should not produce adverse impacts. Dimension binds tightly to soil particles and has low water solubility. Dithiopyr is essentially immobile in soil and stays in place until degraded by chemical and microbial action and thus should have little impact on nearby vegetation.

Wildlife and Sensitive Species. Extensive development of the Niagara Falls ARS has left minimal habitat for wildlife. The herbicides proposed for use do not accumulate in birds and mammals and therefore would not impact them indirectly through the consumption of weeds with applied herbicides. The herbicides proposed for use are minimally retained and rapidly eliminated in fish, birds, and mammals. Herbicides would not be applied directly to aquatic vegetation. However, if the herbicides came in contact with aquatic species, based on its water solubility glyphosate is not expected to bioconcentrate in aquatic organisms. The Proposed Action would therefore have a negligible indirect impact due to the herbicides toxicity to aquatic species.

Triamine® and AM-40 are toxic to aquatic invertebrates. Drift and runoff of the herbicides could adversely affect aquatic invertebrates and nontarget plants. There is a variety of microorganisms in soil, freshwater, and marine ecosystems that are capable of degrading 2,4-D. There is no evidence that

bioconcentration of 2,4-D occurs through the food chain. This has been known from large-scale monitoring studies of soils, foods, feedstuffs, wildlife, human beings, and from other environmental cycling studies.

Barricade has low solubility in water. At the limit of solubility, Barricade is not toxic to fish. However, at concentrations substantially above the level of water solubility, Barricade can be toxic to fish. Therefore, drift and runoff from treated areas can be hazardous to aquatic organisms in adjacent sites. Tests found Dimension Ultra to have little toxicity to mammals, birds, insects, and earthworms. Dithiopyr is considered toxic to bees and fish, and somewhat toxic to aquatic invertebrates. Dithiopyr is slightly toxic to birds on an acute basis, and relatively nontoxic to birds on a chronic basis.

The Proposed Action would have negligible impact on sensitive species. No federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the Installation. The Proposed Action would not include herbicide application in the areas where the Installation's sensitive bird species have been seen (as shown in Figure 3-2). Care would be taken to avoid herbicide application in areas identified as ideal for foraging and nesting.

Wetlands. Herbicide application would not occur near any of the Installation wetlands. Wetland TW-1, a New York State Freshwater Wetland, is the nearest wetland to the proposed herbicide application and is approximately 1,000 feet away (see Figure 3-1). Therefore, no impacts on wetlands are anticipated from the Proposed Action. If herbicide application were to occur within 100 feet of TW-1, a Freshwater Wetlands Permit would be obtained prior to application and all existing regulations would be followed.

4.3 No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and proposed herbicide use would not occur. If the No Action Alternative were carried forward, there would be no change in or effects on air quality, noise, land use, geological resources, biological resources, or hazardous materials and waste generated at Niagara Falls ARS. No herbicide application would take place and weed control would be accomplished through manual and mechanical methods. Manual and mechanical methods have limited use for weed control (if used without follow-up herbicide treatments), because the machinery tends to spread seed and not kill the roots. In general, mechanical methods that disturb soil (heavy equipment or scraping actions) are not appropriate to use near water bodies or wetlands, on steep slopes, or in areas of soft soils. Soil can be compacted and eroded. Subsurface cultural artifacts can be disturbed or destroyed. Therefore, the minor adverse impacts could occur from the No Action Alternative through the continued use of manual and mechanical weed removal.

5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

5.1 Impact Analysis

Other projects evaluated in the cumulative impact analysis were identified through a review of public documents, information gained from the IICEP, and coordination with local agencies. The number of new development activities within the Niagara Falls area is generally low, and no cumulative impacts related to land use, overall zoning, and land management objectives have been identified as a part of the Proposed Action.

914 AW has recently proposed and the construction of a car wash, Fire Training Tower, and Fire/Crash Rescue Station. In 2004, 914 AW proposed eight construction and maintenance projects to renovate, construct, or replace existing facilities; implement the IPMP; and conduct Annual Fire Truck Dry Chemical Testing at Niagara Falls ARS. The proposed projects are (1) revitalize Water Distribution System, (2) extend the AFRC Ramp, (3) widen driveway at Hazardous Waste Storage Building, (4) add to and alter Civil Engineering Building, (5) alter and repair Parking Lots, (6) repair and replace Sanitary Sewer System, (7) construct Bivouac, and (8) replace the Wagner Drive Culvert.

Water Resources. The Proposed Action would have no direct or indirect adverse impacts on water quality. Best management practices would be used to avoid spilling or applying herbicides to aquatic areas that might disrupt aquatic ecosystems. If a spill occurs, the BOS contractor would follow the procedures for spill response according to the Installation HAZMAT Plan. Application methods, weather conditions, and timing of applications are other important criteria that would be employed to reduce the potential for water contamination. Roundup Pro™ and Kleenup Pro™, Triamine®, and AM-40 strongly adsorb to soil particles, with a low potential to move through soil to contaminate groundwater. Microbes in the soil readily and completely degrade it even under low temperature conditions. The herbicides tend to adhere to sediments when released to water and are degraded over time by soil microbes into natural substances such as carbon dioxide. Caution would be exercised when handling Triamine®, AM-40, and Barricade to prevent contamination from spills. Therefore, no significant cumulative impacts related to

hydrology or water quality are anticipated. There would be no impacts from repeat applications of herbicides as these chemicals would degrade rather rapidly following application.

Biological Resources. The Proposed Action would occur on previously disturbed lands within the Installation's cantonment area. Past development practices have caused extensive loss of native habitat and natural resources, and have had a greater adverse impact on the biological resources than would occur from implementation of the Proposed Action. Tests have shown that Roundup Pro™ and Kleenup Pro™, Triamine®, and AM-40, when used according to label directions, have no weed killing activity once in contact with the soil. The herbicides do not move in or on the soil to affect nontarget vegetation, and they do not move through the soil to enter other nontarget plants by the root system. The likelihood that Roundup Pro™ and Kleenup Pro™, Triamine®, and AM-40 would harm nearby plants is negligible.

Under the Proposed Action, a herbicide application would help prevent dispersal of nontarget weed species that may occur from mechanical removal methods. Herbicides would not be applied directly to wetlands or other ecological sensitive areas. However, if the herbicides came in contact with an aquatic species, based on its water solubility, bioconcentration in aquatic organisms is not expected. The herbicides are minimally retained and rapidly eliminated in fish, birds, and mammals. Applications would be conducted according manufacturer's instructions and the Niagara Falls ARS IPMP. Therefore, the cumulative effects on biological resources from this proposed action would be minimal. Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action when combined with other past, present, and future activities.

Table 5-1. Cumulative Effects to Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Water Resources	Surface water quality moderately impacted by development.	Storm water discharge to Cayuga Creek within permitted limits.	Low potential for spilled material to enter water bodies and groundwater contamination.	None	None
Biological Resources	Degraded historic habitat of sensitive and common wildlife species.	Installation operations impact wildlife habitat.	Low potential for spilled material to impact wildlife species. Low potential to indirectly impact wildlife foraging and nesting areas.	None	None

5.2 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources used for the Proposed Action include herbicides and various material supplies (for safe herbicide application). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Biological Habitat. The Proposed Action would result in minimal loss of weeds and wildlife habitat on the proposed herbicide application sites.

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APPENDIX A

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LETTER AND LIST

APPENDIX A

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LIST

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Buffalo, NY 14203-2999

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Dear «Name»

The Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York, have prepared a Supplemental Environmental Assessment (EA) of the Proposed Herbicide Application for the Installation Fenceline, Railroad Tracks, and Broadleaf Weed Control at Niagara Falls ARS, NY.

In June 2005, AFRC signed a Finding of No Significant Impact (FONSI) on the Environmental Assessment (EA) of the Niagara Falls ARS Integrated Pest Management Plan (IPMP). The EA analyzed whether the Installation's IPMP that had been developed provided action and guidelines to ensure that nonchemical control efforts will be used to the maximum extent possible before herbicides are used. Since that time, additional actions required to support the IPMP have been identified. Accordingly, this supplemental EA examines the potential impacts on the environment, for planning purposes, as a result of additional IPMP activities. In accordance with the Council on Environmental Quality (CEQ) regulations on implementing the National Environmental Policy Act (NEPA), the EA will be "tiered" to the Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls International Airport-Air Reserve Station, New York, June 13, 2005.

The environmental impact analysis process for this proposal is being conducted by AFRC in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the NEPA of 1969. In accordance with NEPA and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft Supplemental EA and solicit your comments concerning the proposal and any potential environmental consequences.

Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from the date of this letter. Also enclosed is a listing of those Federal, state, and local agencies that have been contacted (see Attachment 2). If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

Please address questions concerning or comments on the proposal to our consultant, engineering-environmental Management, Inc. (e²M). The point-of-contact at e²M is Mr. Ron Lamb. He can be reached at (703) 273-7171. Please forward your written comments to Mr. Lamb, in care of engineering-environmental Management, Inc. (e²M), 3949 Pender Drive, Suite 120, Fairfax, Virginia 22030. Thank you for your assistance.

Sincerely

«Name»

«Title»

Attachments:

1. EA
2. Distribution List

PUBLIC NOTICE

Notice of Availability

Draft Finding of No Significant Impact (FONSI) and Supplemental Environmental Assessment (EA) of Herbicide Application for Installation Fenceline, Railroad Tracks, and Broadleaf Weed Control and FONSI/Finding of No Practicable Alternative and EA of Construction and Operation of a Fire Training Tower and a Car Wash At Niagara Falls Air Reserve Station, New York

Niagara Falls ARS, New York- A supplemental Environmental Assessment (EA) on the proposed application of herbicide along Installation fenceline and railroad tracks and broadleaf weed control at Niagara Falls Air Reserve Station (ARS), New York has been prepared in accordance with the Integrated Pest Management Plan (IPMP). The supplemental EA is tiered to the *Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Falls Air Reserve Station, New York*, June 13, 2005. The Air Force Reserve Command (AFRC) is proposing to issue a Finding of No Significant Impact (FONSI) based on this Operation of a Fire Training Tower and a Car Wash at Niagara Falls ARS. The AFRC is proposing to issue a FONSI/Finding of No Practicable Alternative (FONPA) based on this EA.

The analysis considered potential effects of Proposed Action, alternative actions, and the No Action Alternative on eleven resources areas; land use, air quality, safety, geological resources, cultural resources, water resources, biological resources, socioeconomic and environmental justice, infrastructure, and hazardous materials and waste. The results, as found in the EAs, show that the affected environment would not be significantly impacted by proceeding with the proposed herbicide application, Fire Training Tower and Car Wash construction and operation activities. However, a portion of the Fire Training Tower would be located within a 100-year floodplain indicating the FONSI/FONPA would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Actions.

A copy of the Draft FONSI, FONSI/FONPA and EAs showing the analysis are available for review at Niagara Falls Public Library, Earl W. Brydges Building, 1425 Main St. Niagara Falls, NY, 14305. Public comments on the documents will be accepted up to 20 February 2006. Written comments and inquiries on the documents should be directed to: 914th AW Office of Public Affairs, 2720 Kirkbridge Drive, Niagara Falls ARS, NY, 14304-5001. Or call 716-236-2136.

**New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9**

270 Michigan Avenue, Buffalo, New York, 14203-2999

Phone: (716) 851-7165 • FAX: (716) 851-7168

Website: www.dec.state.ny.us



Denise M. Sheehan
Commissioner

February 17, 2006

Mr. Ron Lamb, CEP
engineering-environmental Management, Inc.
3949 Pender Dr., Suite 120
Fairfax, VA 22030

Dear Mr. Lamb:

**HERBICIDE APPLICATION
NIAGARA FALLS AIR RESERVE STATION
TOWNS OF NIAGARA AND WHEATFIELD
NIAGARA COUNTY**

This will acknowledge the January 23, 2006 receipt of the Draft Environmental Assessment (EA) on the proposed Herbicide Application for Installation Fenceline, Railroad Tracks, and Broadleaf Control at Niagara Falls Air Reserve Station (ARS). In regard to the application of herbicides in New York State (NYS), please be aware of the following:

1. No herbicide shall be applied so as to introduce it into standing or flowing waters;
2. Application of herbicides shall be made by or under the direct supervision of a NYS Certified Applicator;
3. All products used must be registered with both the United States Environmental Protection Agency and the NYS Department of Environmental Conservation (NYSDEC);
4. The application agent must possess a current pesticides business/agency registration with the NYSDEC;
5. All applications of herbicides must conform with all label instructions and all applicable state and Federal laws and regulations;
6. All applicators must be certified in selected category of pesticide application; and
7. Herbicide application equipment or empty containers may not be washed in streams, ponds or wetlands, or the wash water allowed to flow into any surface waters, including wetlands. Empty containers shall be disposed of in accordance with 6 NYCRR Section 325.4.

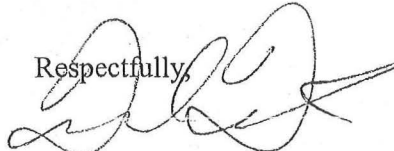
Mr. Ron Lamb, CEP
February 17, 2006
Page 2

Although page 4-6 of the EA states that the proposed herbicide application is approximately 1,000 feet away from the TW-1 Wetland, please also be aware that herbicide application in or within 100 feet of the TW-1 Wetland will require a Freshwater Wetlands Permit pursuant to Article 24 of the NYS Environmental Conservation Law. The boundary of the TW-1 Wetland was delineated on the Niagara Falls ARS on December 9, 1992 by Senior Wildlife Technician, John Curtiss. Staff from STV/Seelye, Stevenson, Value and Kuecht witnessed the delineation and surveyed the delineation on December 18, 1992.

Please recognize that the Devil Crawfish (Cambarus diogenes) have been observed in a ditch on the northwest side of the Niagara Falls ARS. The ditch contained cattails, purple loosestrife, watercress, water plaitain, curly dock and duckweed. The Calico Crawfish is included as a species associated with the Devil Crawfish. There are no global rank specification for the Devil Crawfish, but the survey was very thorough and would be sufficient to assign a rank if specifications were available.

If you have any questions regarding these comments, please contact Mr. Jeffrey Dietz or me at 716-851-7165.

Respectfully,



David S. Denk
Deputy Permit Administrator

JED:jaf

cc: Mr. Glenn Reinhardt, Region 9 Bureau of Pesticides Management
Mr. John Curtiss, Region 9 Division of Fish and Wildlife
Mr. Dermott Smyth, Department of the Air Force/Attn: Mr. James Mathews

APPENDIX B

PROPOSED HERBICIDES MATERIAL SAFETY DATA SHEETS (MSDS)

MONSANTO Company
Material Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

ROUNDUP PRO® Herbicide

EPA Reg. No.

524-475

Product use

Herbicide

Chemical name

Not applicable

Synonyms

None

Company

MONSANTO Company, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, Fax: 314-694-5557

Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S.; Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: 314-694-4000 (collect calls accepted).

2. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	41
Surfactant		14.5
Water and minor formulating ingredients		44.5

OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

Emergency overview

Appearance and odour (colour/form/odour): Clear - Amber / Liquid / Sweet

CAUTION!

CAUSES EYE IRRITATION

Potential health effects

Likely routes of exposure

Skin contact, eye contact

Eye contact, short term

May cause temporary eye irritation.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

4. FIRST AID MEASURES

Eye contact

Immediately flush with plenty of water.

If easy to do, remove contact lenses.

Skin contact

Take off contaminated clothing, wristwatch, jewellery.

Wash affected skin with plenty of water.

Wash clothes before re-use.

Inhalation

Remove to fresh air.

Ingestion

Immediately offer water to drink.

Do NOT induce vomiting unless directed by medical personnel.

If symptoms occur, get medical attention.

Advice to doctors

This product is not an inhibitor of cholinesterase.

Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE FIGHTING MEASURES

Flash point

none

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimize use of water to prevent environmental contamination.

Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (P_xO_y), nitrogen oxides (NO_x)

Fire fighting equipment

Self-contained breathing apparatus.

Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimize spread.

Keep out of drains, sewers, ditches and water ways.

Notify authorities.

Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimize use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

Thoroughly clean equipment after use.

Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Emptied containers retain vapour and product residue.

Refer to section 13 for disposal of rinse water.

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Storage

Minimum storage temperature: -15 °C

Maximum storage temperature: 50 °C

Compatible materials for storage: stainless steel, aluminium, fibreglass, plastic, glass lining

Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Partial crystallization may occur on prolonged storage below the minimum storage temperature.

If frozen, place in warm room and shake frequently to put back into solution.

Minimum shelf life: 5 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Surfactant	No specific occupational exposure limit has been established.
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

No special requirement when used as recommended.

Skin protection

If repeated or prolonged contact:
Wear chemical resistant gloves.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Clear - Amber
Form:	Liquid
Odour:	Sweet
Flash point:	none
Specific gravity:	1.169 @ 20 °C / 15.6 °C
Solubility:	Water: Completely miscible.
pH:	4.4 - 5.0
Partition coefficient (log Pow):	< 0.00 (active ingredient)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: 5,108 mg/kg body weight
Practically non-toxic.
FIFRA category IV.

Acute dermal toxicity

Rat, LD50 (limit test): > 5,000 mg/kg body weight
Practically non-toxic.
FIFRA category IV.
No mortality.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: 2.9 mg/L
Other effects: weight loss, breathing difficulty
Practically non-toxic.
FIFRA category IV.

Skin irritation

Rabbit, 6 animals, OECD 404 test:
Days to heal: 3
Primary Irritation Index (PII): 0.5/8.0
Essentially non irritating.
FIFRA category IV.

Eye irritation

Rabbit, 6 animals, OECD 405 test:
Days to heal: 3
Slight irritation.
FIFRA category III.

Skin sensitization

Guinea pig, Buehler test:
Positive incidence: 0 %

N-(phosphonomethyl)glycine; {glyphosate}

Mutagenicity

In vitro and in vivo mutagenicity test(s):
Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:
NOAEL toxicity: > 5,000 mg/kg body weight/day
Target organs/systems : none
Other effects: none

Rat, oral, 3 months:
NOAEL toxicity: > 20,000 mg/kg diet
Target organs/systems : none
Other effects: none

Carcinogenicity

Mouse, oral, 24 months:
NOEL tumour: > 30,000 mg/kg diet
NOAEL toxicity: ~ 5,000 mg/kg diet
Tumours: none
Target organs/systems : liver
Other effects: decrease of body weight gain, histopathologic effects

Rat, oral, 24 months:
NOEL tumour: > 20,000 mg/kg diet
NOAEL toxicity: ~ 8,000 mg/kg diet

Tumours: none
Target organs/systems: eyes
Other effects: decrease of body weight gain, histopathologic effects

Toxicity to reproduction/fertility

Rat, oral, 3 generations:

NOAEL toxicity: > 30 mg/kg body weight
NOAEL reproduction: > 30 mg/kg body weight
Target organs/systems in parents: none
Other effects in parents: none
Target organs/systems in pups: none
Other effects in pups: none

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival
Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 6 - 27 days of gestation:

NOAEL toxicity: 175 mg/kg body weight
NOAEL development: 175 mg/kg body weight
Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product and components are summarized below.

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
moderately toxic

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 7.3 mg/L
moderately toxic

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 11 mg/L
slightly toxic

Avian toxicity

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
practically non-toxic

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
practically non-toxic

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 100 µg/bee
practically non-toxic

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 1,250 mg/kg soil
practically non-toxic

N-(phosphonomethyl)glycine: {glyphosate}

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days

Koc: 884 - 60,000 L/kg

Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

Recycle if appropriate facilities/equipment available.
Burn in special, controlled high temperature incinerator.
Dispose of as hazardous industrial waste.
Keep out of drains, sewers, ditches and water ways.
Follow all local/regional/national regulations.

Container

Triple rinse empty containers.
Pour rinse water into spray tank.
Store for collection by approved waste disposal service.
Dispose of as non hazardous industrial waste.
Do NOT re-use containers.
Follow all local/regional/national regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

15. REGULATORY INFORMATION

TSCA Inventory

All components are on the US EPA's TSCA Inventory

OSHA Hazardous Components

Surfactant

SARA Title III Rules

Section 311/312 Hazard Categories

Immediate

Section 302 Extremely Hazardous Substances

Not applicable.

Section 313 Toxic Chemical(s)

Not applicable.

CERCLA Reportable quantity

Not applicable.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

Follow all local/regional/national regulations.

Please consult supplier if further information is needed.

In this document the British spelling was applied.

All tests were conducted following OECD guidelines for Good Laboratory Practices (GLP).

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

For more information refer to product label.

Please consult Monsanto if further information is needed.

Follow all local/regional/national regulations.

® Registered trademark of Monsanto Company or its subsidiaries.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

MATERIAL SAFETY DATA SHEET

KleenUp ® Pro

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL
CHEMTREC - DAY OR NIGHT 1-800-424-9300**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KleenUp ® Pro

Synonyms and Chemical name: Isopropylamine salt of glyphosate

EPA Reg. No.: 524-445-65783

Company ID: United Horticultural Supply
419 18th Street
Greeley, CO 80631

Phone #s: Emergency Phone Number: CHEMTREC 1-800-424-9300
Medical Emergency Phone Number: 1-800-228-5635 extension 136

Revisions: New product

MSDS Number: 000514445

Date: 09/04/01

Supersedes: New

2. COMPOSITION INFORMATION ON INGREDIENTS

		Percent by
		Weight
Chemical Ingredients:	Active Ingredient: Isopropylamine salt of glyphosate (CAS: 38641-94-0)	41
	Inert Ingredients: Surfactant (CAS: 61791-26-2)	8
	Water (CAS: 7732-18-5)	51

See section 8 for Personal Protective Equipment (PPE)

3. HAZARDS IDENTIFICATION

Emergency Overview: This formulation causes substantial but temporary eye injury. It may be harmful if swallowed or inhaled. Keep out of reach of children. The most likely routes of exposure is skin contact and eye contact.

Appearance & Odor: This formulation is a yellow-amber liquid with a slight odor.

Warning Statements: Avoid strong bases that can react to liberate heat. Reacts with galvanized steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Potential Adverse Health Effects: Short-term ingestion effects can be irritation to the gastro-intestinal tract, nausea, vomiting or diarrhea. Product may impact by decreasing blood pressure and an increase fluid in lungs. Prolonged overexposure to this product may cause pneumonitis, abnormal heart rhythm and possible systemic problems

Likely routes of Exposure: Dermal and Inhalation

Dermal Contact: This formulation may be harmful if absorbed through the skin. Be sure to wear the proper protective equipment (PPE), see section 8.

Eye Contact: This formulation is corrosive and can cause irreversible eye damage, wear proper PPE, see section 8.

Inhalation Contact: Avoid inhaling vapors or mists. May irritate the respiratory tract, wear proper PPE, see section 8.

Ingestion: Harmful if swallowed, see section 4 for first aid.

Potential Health Effects: The effects are nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache or

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

shortness of breath.

4. FIRST AID MEASURES

If on Skin: Remove all contaminated clothing. Wash skin, hair and fingernails thoroughly with soap and water. If irritation persists seek medical attention. Wash clothing before reuse.

If Inhaled: Remove to fresh air. If breathing is difficult, please administer oxygen. If breathing stops administer artificial respiration. Get medical attention immediately.

If Swallowed: Drink 1 to 2 glasses of water. Call a physician to get medical attention, the emergency telephone number is 1-800-228-5635 extension 136.

If in eyes: Flush with running water for at least 15 minutes while holding open eyelids to help flush out material. If irritation persists, seek medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: Does not flash **Flammable Limits:** None established

Fire Extinguishing Media: Water, dry chemical, carbon dioxide, or foam if available.

Special Fire Fighting Procedures: May produce toxic and noxious fumes under extreme fire conditions. Wear self-contained breathing apparatus and acid resistant protective clothing.

Fire or Explosion Hazards: Carbon monoxide, nitrogen oxides and phosphorus oxides.

See section 15 for NFPA ratings.

6. ACCIDENTAL RELEASE MEASURES

Release or Spill: Wear PPE outlined in section 8. Contain spill, absorb with clay or other absorbent material; sweep up material and place in container for possible land application according to label use or for proper disposal. The product has a low environmental hazard. Check local, state and federal regulations for proper disposal.

7. HANDLING AND STORAGE

Avoid contact with skin and eyes. Wear PPE outlined in section 8. Wash hands thoroughly after handling or contact and do not eat, drink or smoke until you wash your hands.

Always use original container or compatible containers (stainless steel, aluminum, plastic, fiberglass, glass lined tanks) to store pesticides and herbicides in a secured warehouse or storage building. Incompatible for storage with galvanized steel, unlined mild steel, see section 10.

Keep out of reach of children, away from food, drink and animal feed.

See Section 8 for PPE.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment: have eye wash facilities immediately available at locations where eye contact can occur.

Eye Protection: Chemical goggles.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: Respiratory protection is not normally required.

Ventilation: Not normally required. Work in well-ventilated areas. If vapors exceed the acceptable levels, Wear MSHA/NIOSH approved respirator with cartridges for pesticide vapors.

9. Physical and Chemical Properties

Appearance: Dark yellow -amber liquid

Odor: Slight odor

Solubility: Soluble in water

Specific gravity (water= 1): 1.1655

pH: 4.4-5.0 (acid)

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

10. STABILITY AND REACTIVITY

Chemical Stability: Stable **Conditions to Avoid:** Reacts with bases to liberate heat. Excessive cold temperatures

Incompatibility with Other Materials: Strong bases

Hazardous Decomposition Products: Oxides of nitrogen, phosphorus and carbon formed from combustion.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (rat) > 5000 mg/kg **Acute Dermal LD 50 (rabbit)** > 5000 mg/kg

Acute Inhalation LC50 (rat) >2.6 mg/L (No mortality)

Eye Irritation: Substantial but temporary eye injury

Inhalation Irritation: Harmful if inhaled

T The target organs/systems are the eyes, respiratory, and gastro-intestinal.

12. ECOLOGICAL INFORMATION

Environmental Fate: Drift or runoff may adversely affect non-target plants.

Avian toxicity: Bobwhite quail LC50 > 5,620 mg/kg Mallard duck LC50 > 5,620 mg/kg

Arthropod toxicity: Honey bee LD50 > 100 µg/bee (practically non-toxic)

Soil organism toxicity: Earthworm > 5,000 mg/kg

Bioaccumulation: No significant bioaccumulation is expected.

Dissipation: Adsorbs strongly to soil

Biodegradation: Inherently biodegradable

13. DISPOSAL CONSIDERATIONS

Product Disposal: Dispose of as hazardous industrial waste, Follow all local/regional/national regulations for disposal. Do not reuse containers.

Container Disposal: Triple rinse (or equivalent) or equivalent, adding rinsate to spray tank. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

14. TRANSPORT INFORMATION

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS.

DOT Proper Shipping Name: Not regulated by US DOT highway.

U.S. Surface Freight Classification: Compound, Tree or Weed Killing, NOI (NMFC 50320, SUB 2:Class: 60)

MATERIAL SAFETY DATA SHEET

KleenUp® Pro

15. REGULATORY INFORMATION

SARA Hazard Notification/Reporting

SARA Title III, Section 313 None

NFPA & HMIS Hazard Ratings:

NFPA

HMIS

1 Health
0 Flammability
0 Reactivity

0 Least
1 Slight
2 Moderate
3 High

1 Health
0 Flammability
0 Reactivity
D PPE

SARA Title III Hazard Category:

Immediate Y
Delayed N

Fire N
Reactive N

Sudden Release of Pressure N

Reportable Quantity (RQ) under U.S. CERCLA: None

16. OTHER

Prepared by: Dennis Belau

Approved by: Environmentally/ Regulatory Services

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NUFARM AMERICAS INC.

1333 Burr Ridge Parkway, Suite 125A
Burr Ridge, IL 60527-0866

Emergency Phone (Chemtrec): (800) 424-9300

Information: (800) 345-3330

Date Issued: 5/23/03

Supersedes: 9/11/97

Product Code: 1786-RIV

MSDS Number: 178-6

MATERIAL SAFETY DATA SHEET:

Riverdale® Triamine

1. INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight %</u>	<u>Common Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Dimethylamine Salt of 2,4-Dichlorophenoxy-acetic Acid	2008-39-1	16.3%	DMA Salt of 2,4-D	10 mg/m ³ (for 2,4-D Acid)	N/A
Dimethylamine Salt of (+)-R-2-(2-Methyl-4-Chlorophenoxy)propionic Acid	66423-09-4	8.2%	DMA Salt of MCP-p	N/A	N/A
Dimethylamine Salt of (+)-R-2-(2,4-Dichlorophenoxy)propionic Acid	104786-87-0	8.2%	DMA Salt of 2,4-DP-p	N/A	N/A
Water and Sequesterents	NA	67.3%	Inert Ingredients	N/A	N/A
Total		100.0%			

2. HEALTH DATA

PRIMARY ROUTE OF ENTRY:

Dermal/Eye: Yes

Oral: Yes

Inhalation: No

SYMPTOMS OF OVEREXPOSURE:

Nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache, or shortness of breath.

ACUTE HEALTH EFFECTS

Inhalation:

Avoid inhaling vapors or mist. May irritate the respiratory tract or cause dizziness.

Eyes:

Direct and prolonged eye exposure to the concentrated product may cause corneal opacity, irreversible eye damage.

Skin:

Prolonged exposure may cause mild skin irritation and dermal sensitization reactions. Harmful if absorbed through skin, may cause similar symptoms to ingestion.

Ingestion:

May cause muscle weakness, nausea, diarrhea, and abdominal pain. Fall in blood pressure or myotonia (prolonged muscular spasm) may occur under extreme exposure conditions. Can be fatal.

TOXICOLOGICAL DATA

Acute Oral LD50:

2.3 g/ kg; (male rats); 1.8 g/ kg (female rats)

Acute Dermal LD50:

>2 g/ kg (rabbits)

Acute Inhalation LC50:

N/D

Eye Irritation:

severe irritation: corrosive (rabbits)

Dermal Irritation:

mild irritation (rabbits)

Dermal Sensitization:

is a sensitizer (guinea pigs)

MEDICAL CONDITIONS POSSIBLY
AGGRAVATED BY EXPOSURE:

Skin exposure may aggravate existing skin conditions. Exposure to mist may aggravate existing respiratory conditions.

CHRONIC HEALTH EFFECTS:

Agency	Listing	Carcinogen
<u>NTP</u>	<u>IARC</u>	<u>OSHA</u>
NO	NO	NO

Repeated or prolonged overexposure to phenoxy herbicides may cause liver, kidney, gastrointestinal or muscular system effects. The EPA's Science Advisory Panel has given 2,4-D a class D classification (not classifiable as to human carcinogenicity). Various epidemiological studies have yielded conflicting results with the majority being negative. The current scientific consensus is that there is no proven causal association between 2,4-D and cancer. Recent studies have not shown 2,4-D to be a mutagen or teratogen. Other chronic effects of 2,4-DP-p and MCP-p have not been determined.

3. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

IF IN EYES:

Hold eyelids open and rinse slowly and gently with water for 15 to 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 ON SKIN OR CLOTHING:

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

IF INHALED:

Move person to fresh air. If person is 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.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage.

4. FIRE FIGHTING MEASURES

FLASH POINT (F):

N/A

FLASH POINT METHOD USED:

None - aqueous solution

EXTINGUISHING MEDIA:

Use CO₂ or dry chemical for small fires and foam, water fog or water stream for large fires. Use water spray to cool closed containers.

COMBUSTION PRODUCTS:

May include, but are not limited to: hydrogen chloride and nitrogen oxides.

SPECIAL FIRE FIGHTING PROCEDURES:

May produce toxic and noxious fumes under extreme fire conditions. Use positive pressure self-contained breathing apparatus and acid resistant protective clothing. Any water used to extinguish the fire should be contained by diking to prevent contamination of the public water system.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Drums of product will burst from steam pressure under prolonged fire conditions.
See Section 13, REGULATORY INFORMATION, for NFPA rating.

5. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Wear the suggested safety equipment when cleaning large spills (section 7). Surround with impervious material such as dirt to prevent run-off. Absorb product with an inert absorbent such as clay granules or wood shavings. Contain all affected material in a closed, marked container for proper disposal. Treat contaminated area with detergent and water. 2,4-D spills are subject to CERLCA (Superfund) reporting requirements. Reportable Quantity (RQ) = 77 gallons of Triamine.

6. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Always use original container to store pesticides in a secured warehouse or storage building. Do not store near seeds, fertilizers, insecticides, or fungicides. Store at temperatures above 32°F. If allowed to freeze, remix before using. Freezing does not alter this product. Containers should be opened in well ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not contaminate water, food, or feed by storage or disposal.

WORK HYGIENIC PRACTICE:

Wash nondisposable gloves thoroughly with soap and water before removing. After using this product, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water. Remove saturated clothing as soon as possible and shower.

7. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:	Respiratory protection is not normally required. Use a NIOSH/MSHA approved respirator when directly exposed to mist.
VENTILATION:	Open ventilation. Reduce all mist with local exhaust.
PROTECTIVE GLOVES:	Chemical-resistant gloves.
EYE PROTECTION:	Wear splash goggles or face shield when handling.
OTHER PROTECTIVE EQUIPMENT:	Long sleeved shirt, long pants, socks and shoes. Persons engaged in open pouring must wear coveralls or a chemical resistant apron. (See Precautionary Statements on product label for details)

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Dark amber liquid, amine odor
SOLUBILITY IN WATER:	100% in water.
BOILING POINT (F):	207°
VAPOR PRESSURE (mm Hg @ 20 C:	that of water
SPECIFIC GRAVITY (H2O=1):	1.097
pH	7.5 to 8.5
FREEZING POINT (F):	32°
POUNDS PER GALLON:	9.14

9. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Avoid fire conditions.
INCOMPATIBILITY:	Strong oxidizers or acids

HAZARDOUS BYPRODUCTS:

None

HAZARDOUS POLYMERIZATION:

Will Not Occur

10. ECOLOGICAL INFORMATION**ENVIRONMENTAL FATE**

2,4-D, MCPP and 2,4-DP each have a relatively short half-life of, on average 6 to 9, 5 to 17 and 10 days, respectively. Phenoxy herbicides are readily degraded into nontoxicological substances by soil microbes and aquatic microorganisms.

ENVIRONMENTAL FATE

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants.

11. DISPOSAL CONSIDERATIONS**PRODUCT DISPOSAL:**

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixtures or rinsate is a violation of Federal law and may contaminate groundwater. If product cannot be disposed of by use according to the label, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent) and offer for recycling, or puncture and dispose of in a sanitary landfill. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

12. TRANSPORTATION INFORMATION**DOT REGULATED CONTAINER SIZE:**

220 gal, 260 gal
(All smaller container sizes are not DOT regulated)

HAZARD CLASS:

9

UN NUMBER:

UN 3082

PACKING GROUP:

III

GUIDE NUMBER:

171

PROPER SHIPPING NAME:

RQ, Environmentally Hazardous Substances, Liquid, N.O.S. (2,4-D Salt)

13. REGULATORY INFORMATION**SARA TITLE III; Section 311/312:**

An immediate and delayed health hazard.

REPORTABLE QUANTITY (RQ):

100 lbs of 2,4-D acid equivalent or approximately 77 gallons of Triamine. For releases greater than the RQ, contact the National Response Center at (800)424-8802.

SARA TITLE III; SECTION 313-This product contains the following substances subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372

N/A

HMIS INFORMATION	
HEALTH:	2
FLAMMABILITY:	1
REACTIVITY:	0
PROTECTIVE:	D

NFPA INFORMATION	
TOXICITY:	2
FIRE:	1
REACTIVITY:	0
SPECIAL:	N

The information given herein is to the best of our knowledge true and accurate. No warranty, however, expressed or implied, is made.

Riverdale

425 West 194th Street
Glenwood IL 60425

Emergency Phone (Chemtrec): (800) 424-9300

Information Phone: (800) 345-3330

Date Issued: 2/17/98

Supersedes: 2/ 4/92

Product Code: D145R

MSDS Number: 145-1

MATERIAL SAFETY DATA SHEET:

Weedestroy AM-40 Amine Salt

1. INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight %</u>	<u>Common Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	2008-39-1	47.30%	DMA Salt of 2,4-D	10 mg/ m3 (2,4-D Acid)	N/A
Other ingredients including water*	*7732-18-5	52.70%	Inert Ingredients	N/A	N/A
	Total	100.00%			

2. HEALTH DATA

PRIMARY ROUTE OF ENTRY:

Dermal/ Eye: Yes Oral: Yes Inhalation: No

SYMPTOMS OF OVEREXPOSURE:

Nonspecific: muscle weakness, lethargy, loss of appetite, abdominal pains, headache, or shortness of breath.

ACUTE HEALTH EFFECTS

Inhalation:

Avoid inhaling vapors or mist. May irritate the respiratory tract or cause dizziness.

Eyes:

Direct and prolonged eye exposure to the concentrated product may cause corneal opacity, irreversible eye damage.

Skin:

This product is considered a minimal skin irritant and is not a dermal sensitizer. Harmful if absorbed through the skin. Repeated or prolonged exposure may cause effects similar to those caused by ingestion.

Ingestion:

May cause muscle weakness, nausea, diarrhea, and abdominal pain. Fall in blood pressure or myotonia (prolonged muscular spasm) may occur under extreme exposure conditions. Can be fatal.

TOXICOLOGICAL DATA

Acute Oral LD50:

1000 mg/ kg

Acute Dermal LD50:

1016 mg/ kg

Acute Inhalation LC50:

> 3.5 mg/ L

Eye Irritation:

severe irritation (rabbits)

Dermal Irritation:

minimal irritation

Dermal Sensitization:

not a sensitizer

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin exposure may aggravate existing skin conditions. Exposure to mist may aggravate existing respiratory conditions.

CHRONIC HEALTH EFFECTS:

Agency Listing Carcinogen

<u>NTP</u>	<u>IARC</u>	<u>OSHA</u>
No	No	No

Repeated or prolonged overexposure to phenoxy herbicides may cause liver, kidney, gastrointestinal or muscular system effects. The EPA's Science Advisory Panel has given 2,4-D a class D classification (not classifiable as to human carcinogenicity). Various epidemiological studies have yielded conflicting results with the majority being negative. The current scientific consensus is that there is no proven causal association between 2,4-D and cancer. Recent studies have not shown 2,4-D to be a mutagen or teratogen.

3. FIRST AID MEASURES**EYE CONTACT:**

Hold eyelids open and flush entire eye with a steady, gentle stream of water for 15 minutes. Get medical attention, preferably an ophthalmologist.

INHALATION:

Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth to mouth. Get medical attention.

INGESTION:

Drink promptly a large quantity of milk, egg whites or gelatin solution, or, if these are not available, drink large quantities of water. Get medical attention. Avoid alcohol. Do not induce vomiting or give anything by mouth to an unconscious person.

SKIN CONTACT:

Wash affected area with soap and water. If irritation persists, get medical attention.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate gastric lavage. If large amounts of the product were ingested, the stomach should be emptied by gastric intubation.

4. FIRE FIGHTING MEASURES**FLASH POINT (F):**

N/A

FLASH POINT METHOD USED:

None- aqueous solution

EXTINGUISHING MEDIA:

Use CO2 or dry chemical for small fires and foam, water fog, or water stream for large fires. Use water spray to cool closed containers.

COMBUSTION PRODUCTS:

May include, but are not limited to: hydrogen chloride and nitrogen oxides

SPECIAL FIRE FIGHTING PROCEDURES:

May produce toxic and noxious fumes under extreme fire conditions. Use positive pressure self-contained breathing apparatus and acid resistant protective clothing. Any water used to extinguish the fire should be contained by diking to prevent contamination of the public water system.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Drums of product will burst from steam pressure under prolonged fire conditions.

See Section 13, REGULATORY INFORMATION, for NFPA ratings.

5. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Wear the suggested safety equipment when cleaning large spills (section 7) Surround with impervious material such as dirt to prevent run-off. Absorb product with an inert absorbent such as clay granules or wood shavings. Contain all affected material in a closed, marked container for proper disposal. Treat the contaminated area with detergent and water. 2,4-D spills are subject to CERCLA (Superfund) reporting requirements. Reportable Quantity (RQ) = approximately 26 gallons of AM-40 Amine.

6. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Always use original container to store pesticides in a secured warehouse or storage building. Do not store near seeds, fertilizers, insecticides, or fungicides. Store at temperatures above 32 F. If allowed to freeze, rewarm to 40 F, remix thoroughly before using. Freezing does not alter this product. Containers should be opened in well ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not contaminate water, food, or feed by storage or disposal.

WORK HYGIENIC PRACTICE:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7. EXPOSURE CONTROL/PERSONAL PROTECTION

	Respiratory protection is not normally required. Use a NIOSH/MSHA approved respirator when directly exposed to mist.
VENTILATION:	Open ventilation. Reduce all mist with local exhaust.
PROTECTIVE GLOVES:	Rubber or chemical-resistant gloves (See Precautionary Statements on product label for details.)
EYE PROTECTION:	Wear splash goggles, face shield, or safety glasses with front, brow, and temple protection.
OTHER PROTECTIVE EQUIPMENT:	Long sleeved shirt, long pants, socks and shoes. Persons engaged in open pouring must wear coveralls or a chemical resistant apron.

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Dark brown liquid, mild amine odor
SOLUBILITY IN WATER:	Infinite in water
BOILING POINT (F):	> 212
VAPOR PRESSURE (mm Hg @ 20 C):	N/D
SPECIFIC GRAVITY (H2O = 1):	1.161
pH:	7.5 - 8.5
FREEZING POINT (F):	32
POUNDS PER GALLON:	9.60

9. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Avoid heat conditions
INCOMPATIBILITY:	Strong oxidizers or acids

HAZARDOUS BYPRODUCTS:

None

Will Not Occur

10. ECOLOGICAL INFORMATION**ENVIRONMENTAL FATE:**

2,4-D has a relatively short half-life (on average 6-9 days in soil, 6-7 in grass) and is readily degraded into nontoxicological substances by soil microbes and aquatic microorganisms. Research has shown that 2,4-D does not bioaccumulate to any significant degree in mammals or in other organisms.

ECOTOXICITY:

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants.

11. DISPOSAL CONSIDERATIONS**PRODUCT DISPOSAL:**

Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixtures or rinsate is a violation of Federal law and may contaminate groundwater. If product cannot be disposed of by use according to the label, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent), adding rinsate to spray tank. Then offer for recycling, or puncture and dispose of in a sanitary landfill. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

12. TRANSPORTATION INFORMATION

30 Gal, 55 Gal, 220 Gal, 260 Gal, Tank Truck
(All smaller container sizes are not DOT regulated)

HAZARD CLASS:

9

UN NUMBER:

UN 3082

PACKING GROUP:

III

GUIDE NUMBER:

171

PROPER SHIPPING NAME:

RQ Environmentally Hazardous Substances, Liquid, N.O.S. (2,4-D Salt)

13. REGULATORY INFORMATION**SARA TITLE III; Section 311/312:**

An immediate and delayed health hazard.

REPORTABLE QUANTITY (RQ):

100 lbs of 2,4-D acid equivalent or approximately 26 gallons of AM-40. For releases greater than the RQ, contact the National Response Center at (800) 424-8802.

SARA TITLE III; Section 313- This product contains the following substances subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

N/A

HMIS INFORMATION	
HEALTH:	2
FLAMMABILITY:	1
REACTIVITY:	0
PROTECTIVE:	D

NFPA INFORMATION	
TOXICITY:	2
FIRE:	1
REACTIVITY:	0
SPECIAL:	N

The information given herein is to the best of our knowledge true and accurate. No warranty, however, expressed or implied, is made.



MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **BARRICADE 65WG HERBICIDE** Product No.: A9950A
EPA Signal Word: Caution
Active Ingredient(%): Prodiamine (65.0%) CAS No.: 29091-21-2
Chemical Name: N3,N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine
Chemical Class: Dinitroaniline Herbicide
EPA Registration Number(s): 100-834 Section(s) Revised: 2

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Kaolin Clay	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	2 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)**	No
Dispersing Agent	Not Established	Not Established	15 mg/m ³ TWA (total)*	No
Prodiamine (65.0%)	Not Established	Not Established	10 mg/m ³ TWA ***	No

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: C, S

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Causes mild eye and skin irritation. Allergic skin reactions are possible.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Yellow granules

Odor: Odorless

Unusual Fire, Explosion and Reactivity Hazards

This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680°F [360°C]) can serve as ignition sources for this material.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison

control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

- | | | |
|------------------------------|-------------------------|-------------------------|
| Flash Point (Test Method): | Not Applicable | |
| Flammable Limits (% in Air): | Lower: % Not Applicable | Upper: % Not Applicable |
| Autoignition Temperature: | Not Available | |
| Flammability: | Not Flammable | |

Unusual Fire, Explosion and Reactivity Hazards

This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680°F [360°C]) can serve as ignition sources for this material.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form. Bulk bags (FIBC) used to contain this material should be either type B or type C. If type C bags are used make sure they are electrically grounded before powder is discharged from the bag. This material is considered explosion class (Kst) 2. This material can energetically decompose at approximately 383°F (195°C). Do not store or process at temperatures above 320°F (160°C).

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles.
- Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation: A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with any HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Yellow granules
- Odor: Odorless
- Melting Point: Not Available
- Boiling Point: Not Applicable
- Specific Gravity/Density: 0.63 g/cm³
- pH: 8.0 (5% in deionized water)

Solubility in H₂O

- Prodiamine: 0.013 ppm @ 77°F (25°C)

Vapor Pressure

- Prodiamine: <5.6 x 10⁻⁶ mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: Thermal, mechanical and electrical ignition sources.
- Materials to Avoid: Oxidizing agents.
- Hazardous Decomposition Products: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Practically Non-Toxic
Oral (LD50 Rat) : > 5,000 mg/kg body weight
- Dermal: Slightly Toxic
Dermal (LD50 Rat) : > 2,000 mg/kg body weight
- Inhalation: Slightly Toxic
Inhalation (LC50 Rat) : 1.81 mg/l air - 4 hours
- Eye Contact: Mildly Irritating (Rabbit)
- Skin Contact: Practically Non-Irritating (Rabbit)
- Skin Sensitization: Sensitizing (Guinea Pig)

Reproductive/Developmental Effects

Prodiamine: Fetal toxicity at high dose levels (rats); developmental and maternal toxicity observed at 1g/kg/day.

Chronic/Subchronic Toxicity Studies

Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose levels (rats); decreased body weight gains.

Carcinogenicity

Prodiamine: Benign thyroid tumors (rat). None observed (mouse).

Other Toxicity Information

None.

Toxicity of Other Components

Dispersing Agent

Exposure can result in eye, skin and respiratory tract irritation.

Kaolin Clay

The toxicological properties of this material have not been fully investigated. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. This is expected to be a low hazard for usual industrial handling.

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs.

Continued long term overexposure may affect respiratory function in some individuals.

Target Organs

Active Ingredients

Prodiamine: Liver, thyroid

Inert Ingredients

Dispersing Agent: Eye, skin, respiratory tract

Kaolin Clay: Eye, skin, lung, digestive tract

12. ECOLOGICAL INFORMATION

Summary of Effects

Prodiamine:

Highly toxic to fish and invertebrates. Practically non-toxic to birds and bees.

Eco-Acute Toxicity

Prodiamine: Rainbow Trout 96-hour LC50 0.83 ppm
Bluegill Sunfish 96-hour LC50 0.55 ppm
Daphnia magna 48-hour LC50 0.66 ppm
Bobwhite 8-day Dietary LC50 > 10,000 ppm
Mallard 8-day Dietary LC50 > 10,000 ppm
Bees LC50/EC50 > 100 ug/bee

Eco-Chronic Toxicity

Prodiamine: Not Available

Environmental Fate

Prodiamine:

The information presented here is for the active ingredient, prodiamine.

Does not bioaccumulate. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Not regulated.

B/L Freight Classification

Herbicides, NOI

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prodiamine, 65%), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3077

Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA-SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard
Reactive Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 2
Instability: 1

HMIS Hazard Ratings

Health: 2
Flammability: 2
Reactivity: 1

0 Minimal
1 Slight
2 Moderate
3 Serious
4 Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 01/02/1992

Revision Date: 12/03/2004

Replaces: 10/21/2004

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

Material Safety Data Sheet
Dimension* Herbicide

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In Case of Emergency Call 519 339 3711

1. Product Identification:**Product name:** Dimenslon[®] Herbicide**Product code numbers:** 88828**Product GMID numbers:** 173203**MSDS number:** DASI-179**Effective date:** August 3, 2001**Date printed:** January 6, 2004**Supplier:**

Dow AgroSciences Canada Inc.
 1144 - 29 Avenue N.E.
 Calgary, Alberta,
 Canada, T2E 7P1
www.dowagro.ca

This product is regulated under authority of the Pest Control Products Act

2. Composition:

Component	CAS number	%(w/w)
Dithiopyr	097886-45-8	12.7 to 13.00
Other ingredients		87.0 to 87.3
Including		
Proprietary aromatic solvent	064742-94-5	
Proprietary surfactant	not available	
Related reaction products	not available	
Napthalene ¹	000091-20-3	9.9 ²
1,2,4-trimethylbenzene ¹	000095-63-6	1.7 ²

¹contained in proprietary aromatic solvent² As a component of entire formulation**3. Hazard Identification:****Emergency Overview:**

This product is a clear liquid with a mild aromatic odor. Direct contact may cause substantial eye irritation. Avoid inhalation of vapor or mists. This product may be harmful if swallowed.

Special Health Precautions: This product contains a petroleum-based solvent. Health studies have shown that many petroleum-based solvents pose potential human health risks, which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes of solvents contained in this product should be minimized.

Potential Health Effects:

Eyes: Direct contact may cause substantial eye irritation.

Skin contact: Prolonged or repeated contact may cause skin irritation, defatting and drying of the skin that can lead to further irritation and dermatitis.

Skin absorption: A single prolonged exposure is not likely to result in this material being absorbed in harmful amounts.

Ingestion: Small amounts of liquid aspirated during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

Inhalation: Excessive exposure to the solvents contained in this formulation may cause respiratory irritation and central nervous system depression. Signs and symptoms of excessive exposure may be nausea and/or vomiting.

4. First Aid Measures:

Eyes: Flush eyes with a gentle continuous stream of flowing water for fifteen minutes. Get prompt medical attention.

Skin: Wash or shower with plenty of soap and water. Get medical attention if irritation persists.

Ingestion: Do not induce vomiting unless instructed to do so by qualified medical personnel. If conscious, give individual two glasses of water to drink and get medical attention.

Inhalation: Remove individual to fresh air if breathing difficulty occurs. If breathing has stopped, give artificial respiration.

Note to physician:

This product contains a petroleum-based solvent. In case of acute naphtha overexposure or ingestion, patients should be monitored for signs of respiratory distress. The decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, endotracheal control is suggested. The danger of lung aspiration must be weighed against toxicity when considering emptying the

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stomach. If a burn is present, treat as any thermal burn, after decontamination. There is no specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient.

5. Fire-fighting Measures:

Flash point: 63°C (Tagliabue closed cup)

Flammable limits: LFL: 0.8% for solvent, naphtha

UFL: 7.9% for solvent, naphtha

Auto-ignition temperature: 443°C for solvent, naphtha

Extinguishing media: Use CO₂, foam, dry chemical or water spray.

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards: Remain upwind. Contain firefighting water for future disposal.

Fire-fighting equipment: Wear positive-pressure self-contained breathing apparatus and full turnout gear.

6. Accidental Release Measures:

Ventilate the spill area. Avoid breathing vapors. Eliminate all ignition sources. Soak up small spills with absorbent material and store in secure containers until safe disposal can be arranged. Avoid the use of water for cleanup. Do not allow spilled material to contaminate water supplies. For large spills, dike and barricade the affected area and contact Dow AgroSciences at 519 339 3711.

7. Handling and Storage:

Handling: Do not handle this product near food, feed or water. Keep out of reach of children or animals. Avoid breathing fumes or vapors, ingestion and contact with eyes, skin or clothing. Ground all containers when transferring material. Remove and wash contaminated clothing before reuse. Users should wash hands and face before eating, drinking, chewing gum, using tobacco or the toilet.

Storage: The minimum recommended storage temperature is 5°C. Store in a well-ventilated area away from excessive heat sources such as steam pipes heat radiators, etc. Do not ship or store this product with foodstuffs, feed, drugs or clothing.

8. Exposure Controls, Personal Protection and Exposure Limits:

Exposure limits: Proprietary aromatic solvent: not available; for naphthalene, ACGIH recommends a TWA of 10 ppm (52 mg/m³) and a STEL of 15 ppm (79 mg/m³), with a skin designation of A4.

Trimethylbenzene: ACGIH recommendation is 25 ppm (123 mg/m³).

Dithiopyr: not available; manufacturer recommends TWA of 0.25 mg/m³, STEL of 0.75 mg/m³.

Proprietary surfactant: not available

Related reaction products: not available

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. In confined spaces, where airborne levels may exceed exposure guidelines, provide supplementary exhaust ventilation.

Breathing: Atmospheric levels should be maintained below the exposure guidelines. For emergency and other conditions where the exposure guidelines may be exceeded, workers must wear an approved full or half-face respirator equipped with organic vapor cartridges or canister approved for pesticide use or loose fitting powered air-purifying respirator. Where exposure guidelines may be greatly exceeded, or in confined or poorly ventilated areas, workers must use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

Protective clothing: For brief contact during manufacture, warehousing and transport, wear clean body-covering clothing. During operations where direct contact to the concentrated product may occur, use protective clothing impervious to this product. Selection of specific items such as face shield, respirator, boots, gloves, apron or full body suit will depend on the operation being carried out. Applicators and other field handlers, including persons repairing or cleaning application equipment, must wear coveralls over clean body-covering clothing, impervious gloves and boots. In addition, persons making and/or transferring field dilutions of this product should wear an impervious apron.

Eyes: Use chemical workers' goggles.

Other protection: None stated

9. Physical and Chemical Properties:

Boiling point: 176 to 210°C for solvent, naphtha

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Vapor pressure: 3 mm Hg at 25°C for solvent, naphtha

Volatility: 85% (approximate)

pH: 4.1 as aqueous emulsion

Appearance: yellow liquid

Odor: mild aromatic

Coefficient of water/oil distribution: not available

Specific gravity: 0.95

Evaporation rate: >1

Solubility in water: emulsifies

Viscosity: 11 cP

Odor threshold: not available

Melting point: not available

10. Stability and Reactivity:

Stability: This product is stable under normal storage conditions.

Incompatibility: Avoid contact with strong oxidizing agents. Avoid ignition sources.

Hazardous decomposition products: None known

Hazardous polymerization: Does not occur

11. Toxicological Information:

Skin absorption: LD50 (rabbit) is >5000 mg/kg.

Ingestion: LD50 (rat) is 3600 mg/kg.

Inhalation: LC50 for rat is 11 mg/L for four hours.

Sensitization: Skin sensitization has been reported in sensitive individuals.

Chronic effects: Repeated exposure to dithiopyr may cause kidney, liver, blood, and adrenal effects as well as thyroid damage. In long-term studies with dithiopyr, liver and kidney toxicity, and effects on the adrenals and spleen were observed.

Cancer: Dithiopyr did not produce any tumours in long-term animal studies. This product contains naphthalene. A NTP report states that a lifetime inhalation exposure to naphthalene resulted in increases in tumours of the nose in rats. In a previous NTP study, lifetime inhalation exposure to naphthalene increased lung tumours in female mice.

Birth defects: No birth defects were observed in rabbit and rat given dithiopyr during pregnancy, even at doses that produced adverse effects on the mothers.

Reproductive effects: No effects were seen on the ability of male or female rat to reproduce when fed dithiopyr for two successive generations.

Mutagenicity: Test results showed that dithiopyr is not a mutagen.

12. Ecological Information:

Dithiopyr is considered toxic to bees and fish, and somewhat toxic to aquatic invertebrates. Dithiopyr is slightly toxic to birds on an acute basis, and relatively non-toxic to birds on a chronic basis. Bio-concentration potential is not available.

Degradation and Metabolism:

Soil/Environment: Half-life of dithiopyr in soil is 17 to 61 days, depending on the formulation type. The major soil metabolites are the di-acid, the normal mono-acid and the reverse mono-acid; these metabolites, themselves, dissipate almost completely within one year. Dithiopyr is stable to soil photolysis.

Animals: In rat, dithiopyr is rapidly absorbed, extensively metabolized and rapidly excreted.

Plants: Not available

13. Disposal Considerations:

Unused unwanted product: Contact Dow AgroSciences or your provincial regulatory agency for disposal information.

Container disposal: Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

14. Transport Information:

For TDG classification and proper shipping name, please refer to the product label, the shipping document, or contact Dow AgroSciences Customer Service at 800 387 4133.

15. Regulatory Information:

Pest Control Products Act registration number: 23003

For information phone: 800 667 3852

Master reference: Rohm and Haas 866676-7

MSDS status: New MSDS (DASCI format)

Date of last revision: Rohm and Haas MSDS: March 15, 1999

16. Other Information:

National Fire Code classification: IIIA

NFPA ratings: Health: 3; Flammability: 2; Reactivity: 0.

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