

**INSTALLATION RESTORATION PROGRAM**  
**FINAL**  
**NO FURTHER REMEDIAL ACTION PLANNED**  
**DECISION DOCUMENT**  
**SITE 26**



**MINNESOTA AIR NATIONAL GUARD**  
**148th FIGHTER WING**  
**DULUTH, MINNESOTA**

**19980617 013**

**Prepared For:**

**Air National Guard**  
**Andrews AFB, Maryland**

**March 1998**

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## LIST OF ACRONYMS

ug/kg	micrograms per kilogram
ug/L	micrograms per liter
AFB	Air Force Base
ANG	Air National Guard
ARAR	applicable and relevant or appropriate requirements
BTEX	benzene, toluene, ethylbenzene, and xylenes
DIA	Duluth International Airport
DOD	Department of Defense
FW	Fighter Wing
GC	gas chromatograph
HRL	Health Risk Limit
IRP	Installation Restoration Program
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
NGVD	National Geodetic Vertical Datum
PA	Preliminary Assessment
PCBs	polychlorinated biphenyls
pCi/g	picocuries per gram
pCi/L	picocuries per liter
ppm	parts per million
RI	Remedial Investigation
SI	Site Investigation
SVOCs	semivolatile organic compounds
VOCs	volatile organic compounds

## 1.0 INTRODUCTION

This decision document presents the rationale for the decision of no further remedial action which is proposed for Site 26, Ramp Disposal Area, at the Minnesota Air National Guard (ANG), 148<sup>th</sup> Fighter Wing (Base) located at the Duluth International Airport (DIA) in Duluth, Minnesota. This document is part of the U.S. Department of Defense's (DOD's) Installation Restoration Program (IRP).

## **2.0 SITE DESCRIPTION AND HISTORY**

The Base is located in St. Louis County at the DIA approximately seven miles northwest of the City of Duluth. The regional location of the Base is shown on Figure 1. DIA occupies approximately 2,000 acres of land. The Base occupies buildings on the east side of the airport facility with some additional buildings and functions at other locations.

The airport has been used for military operations since 1948. From 1948 to 1961, the airport was used by the 179th Fighter Squadron, which was part of the 133rd Fighter Wing (FW) of the Minnesota ANG. From 1961 to 1995, the 148th Fighter Group of the Minnesota ANG was active at the airport. In 1995, the 148th Fighter Group was redesignated the 148th FW which continues operation at the airport today.

This section presents a site description and history for Site 26 at the Base in Duluth, Minnesota. Figure 2 shows the location of Site 26 , Ramp Disposal Area, on the Base.

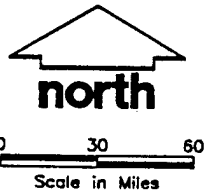
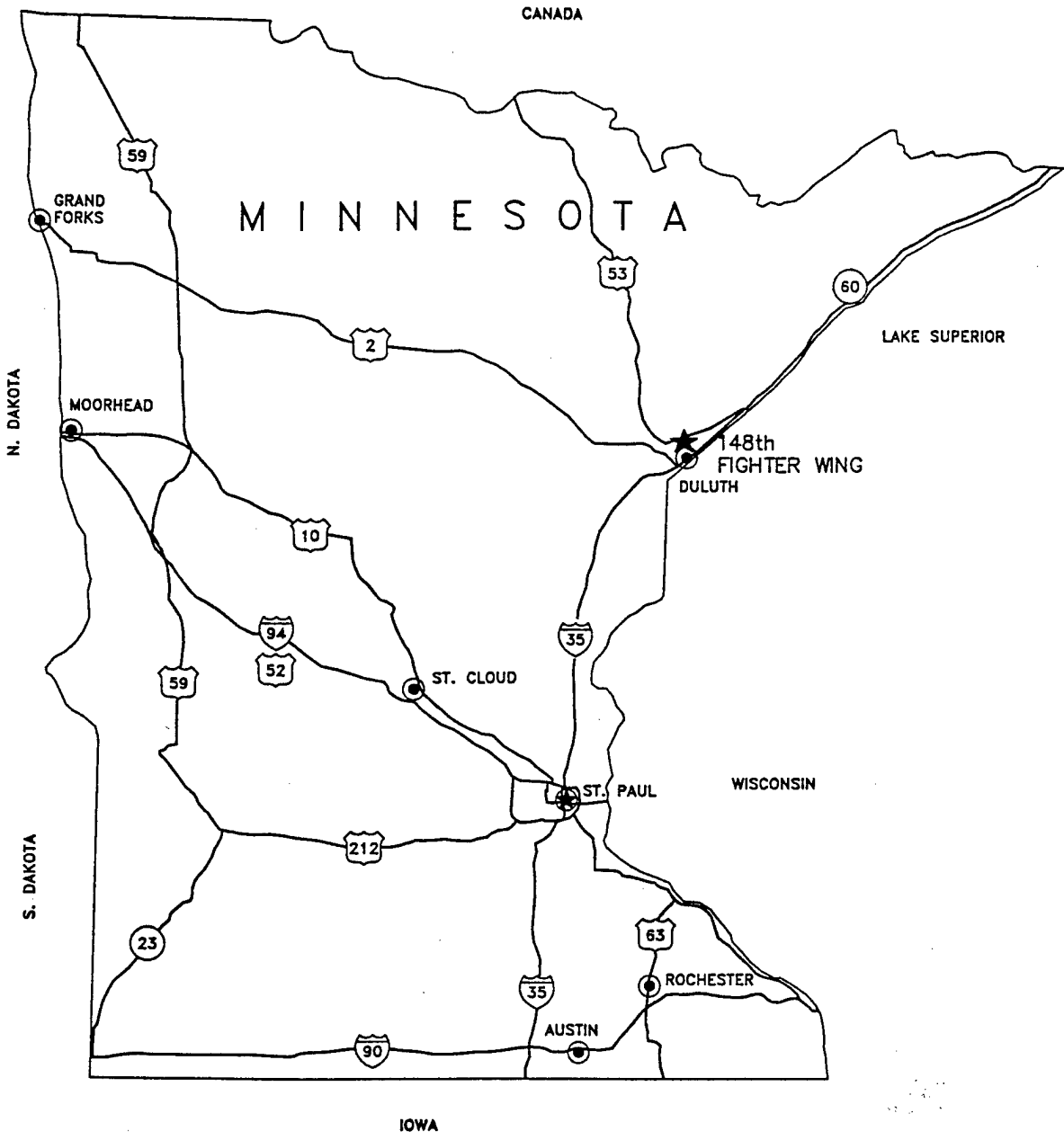
### **2.1 DESCRIPTION**

Site 26 is adjacent to the aircraft ramp located west of Buildings 499 and 500 (Figure 2). The site encompasses an area of approximately 0.5 acres and was used in the 1960s and 1970s to store 55-gallon drums of contaminated aircraft fuel. Buckets of contaminated aircraft fuel were reportedly disposed onto the soil surface along the edge of the ramp.

Site 26 is 10 to 20 feet higher than the terrain to the east and south of the Base. Topography to the east of the Base is more pronounced, as the elevated hill drops off sharply to an area of a marshy area which drains into the nearby Miller Creek. The elevation of the Base is approximately 1,420 feet above the National Geodetic Vertical Datum of 1929 (NGVD).

### **2.2 HISTORY**

The non-paved area west of the aircraft ramp and Building 500 is designated IRP Site No. 26 (Figure 2.2). Reportedly, waste fuel from aircraft operations was stored in 55-gallon drums along the ramp in the 1960s and 1970s. Additionally, small amounts of waste fuel from aircraft were disposed of by dumping the waste fuel in the dirt along the edge of the ramp. According to former aircraft maintenance personnel, this resulted in the soil becoming discolored (i.e., black) along the ramp edge.



SOURCE: RAND McNALLY ROAD ATLAS, 1992.

MINNESOTA ANG, 148TH FIGHTER WING  
 DULUTH INTERNATIONAL AIRPORT  
 DULUTH, MINNESOTA

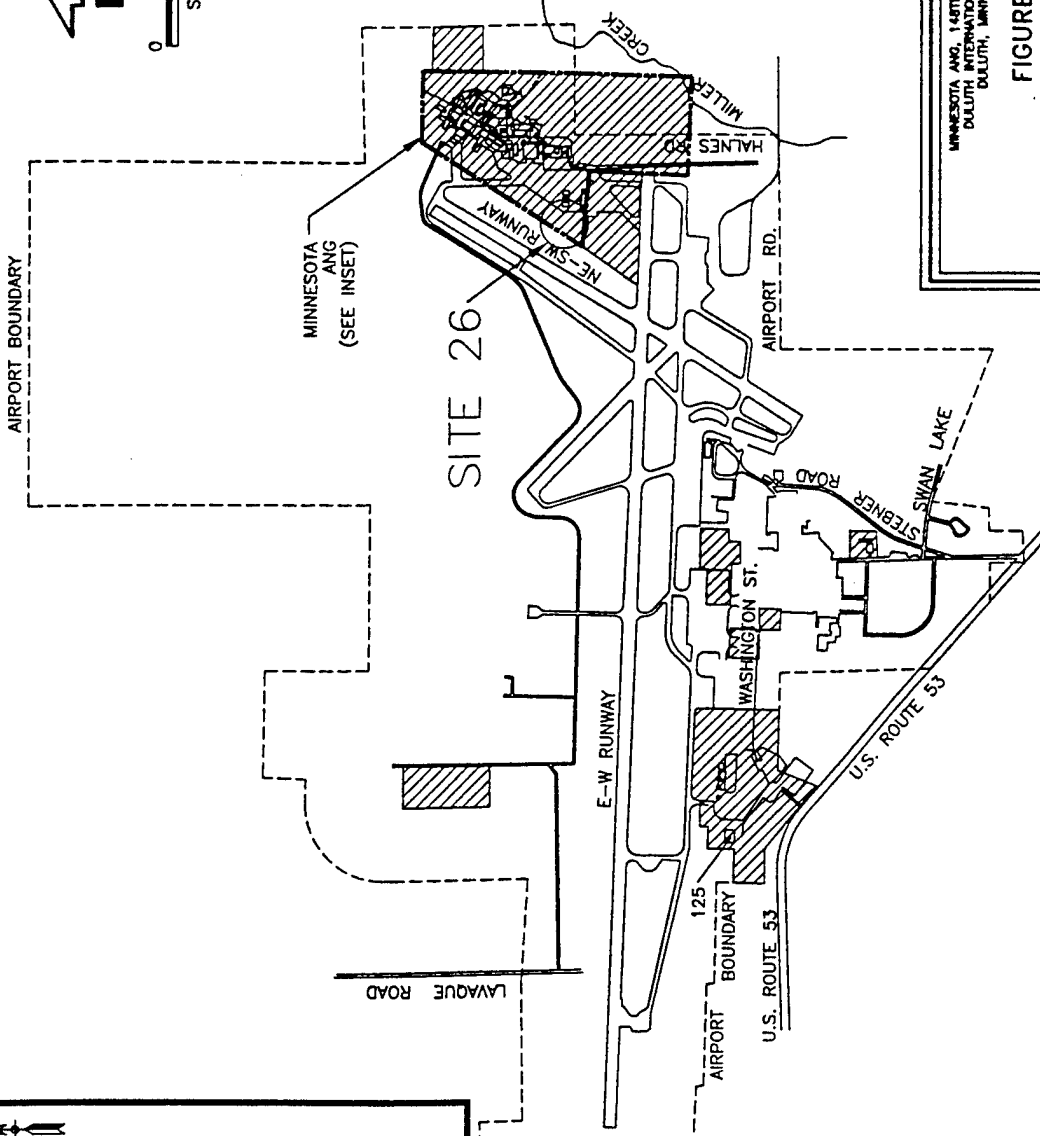
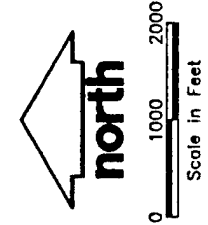
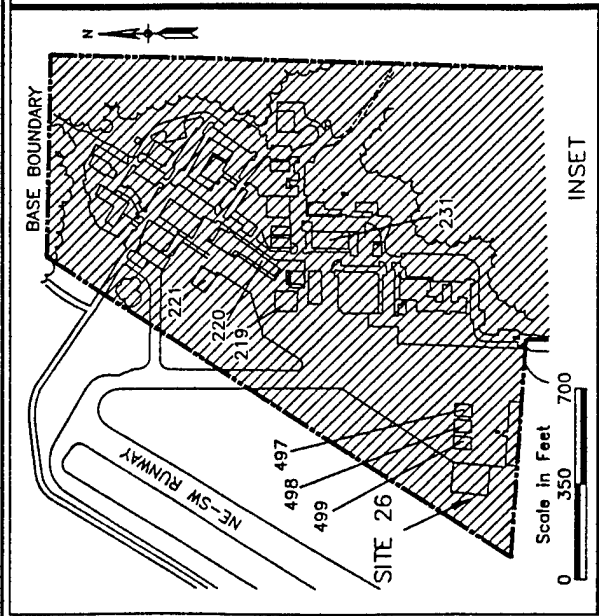
FIGURE 1  
 BASE LOCATION MAP

**MONTGOMERY WATSON**

FIG1.DWG REVISED 3/98



FIG2.DWG (REVISED 3/98)



- LEGEND**
- MINNESOTA ANG BOUNDARY
  - - - AIRPORT BOUNDARY
  - ▨ ANG LEASED PROPERTY
  - 125 BUILDING/BUILDING NUMBER
  - ~ TREE LINE

SOURCE: ENGINEERING-SCIENCE, INC., REMEDIAL INVESTIGATION REPORT, JANUARY 1990.

MINNESOTA ANG, 148TH FIGHTER WING  
DULUTH INTERNATIONAL AIRPORT  
DULUTH, MINNESOTA

**FIGURE 2**  
**SITE 26 LOCATION**

**MONTGOMERY WATSON**

### 3.0 SUMMARY OF INVESTIGATIONS

A Preliminary Assessment (PA) was conducted at the Base in February 1993, and finalized in August 1993 (Optech, 1993). Information obtained through interviews, review of base records, and field observations resulted in the identification of IRP Site 26 (Ramp Disposal Area).

A Site Investigation (SI) was conducted to confirm the presence or absence of contamination at Site 26. The field investigation for the SI commenced on May 2, 1995 and was completed on May 20, 1995 (Optech, 1996).

The field investigation at Site 26 included drilling six soil borings to obtain soil samples for laboratory analyses. Soil borings were drilled to depths ranging from 7 to 12 feet below grade. A field gas chromatograph (GC) was used to screen soil samples for benzene, toluene, ethylbenzene, and xylenes (BTEX). Samples were also submitted for laboratory analysis. Sample results were used to determine contaminant concentrations, to delineate vertical and horizontal extent of soil contamination at the site, and to evaluate the potential for contaminant impact to groundwater. Soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals.

The field investigation also included installing three monitoring wells to obtain groundwater samples for laboratory analyses and data for hydrogeologic characterization of the hydrologic unit. One round of groundwater samples was collected. Samples were analyzed for VOCs and SVOCs.

#### 4.0 CONTAMINATION ASSESSMENT

This section discusses the nature and extent of contamination at Site 26. Table 1 presents a summary of results and the associated applicable and relevant or appropriate requirements (ARARs).

Contaminant concentrations were detected at low levels in the soil. Using the field GC, benzene, toluene, ethylbenzene, m,p-xylene, and o-xylene were detected in soil samples at maximum concentrations of 0.011 milligrams per kilogram (mg/kg), 0.006 mg/kg, 0.017 mg/kg, 0.026 mg/kg, and 0.006 mg/kg, respectively. Benzene, toluene, and ethylbenzene were detected at maximum concentrations of 0.01 mg/kg, 0.002 mg/kg, and 0.003 mg/kg, respectively, in groundwater samples. M,p-xylene and o-xylene were not detected in groundwater samples using field GC.

Toluene was detected by laboratory analysis in a duplicate soil sample at a concentration of 0.007 mg/kg, slightly exceeding the analytical detection limit of 0.005 mg/kg. This sample was collected at a depth of 2 to 2.5 feet below grade near the ramp. Toluene was not detected in the original sample. Three SVOCs were detected in a near-surface soil sample collected from a second soil boring near the ramp. Fluoranthene, phenanthrene, and pyrene were detected at 0.870 mg/kg, 0.800 mg/kg, and 0.710 mg/kg, respectively, in a sample collected from a depth of 2 to 2.5 feet below grade. Chromium and lead concentrations were detected at concentrations below background levels.

The maximum concentrations of benzene, ethylbenzene, and toluene detected in groundwater by laboratory analysis were 0.01 microgram per liter (ug/L), 0.003 ug/L, and 0.002 ug/L, respectively. Phenol was detected in all three groundwater samples at a concentration of 51 ug/L. None of these concentrations exceed ARARs.

TABLE 1

SUMMARY OF INVESTIGATION RESULTS  
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Selected Analytes	Maximum Detected Concentration	Background Concentrations	Potential ARAR	Source of ARAR	ARAR Exceeded
<u>Groundwater</u>					
Benzene	0.01 ug/l	*	5 ug/L	MCL	No
Ethylbenzene	0.003 ug/L	*	700 ug/L	MCL	No
Toluene	0.002 ug/L	*	1,000 ug/L	HRL	No
Xylenes (Total)	ND	*	10 ug/L	MCL	No
Phenol	51 ug/L	*	4,000 ug/L	MCL	No
<u>Soil</u>					
Toluene	0.007 mg/kg	*	*	*	*
Fluoranthene	0.870 mg/kg	*	*	*	*
Phenanthrene	0.800 mg/kg	*	*	*	*
Pyrene	0.710 mg/kg	*	*	*	*
Chromium	13 mg/kg	42.2 mg/kg	*	*	*
Lead	5.9 mg/kg	9.9 mg/kg	100 mg/kg	<sup>1</sup> State	No

Notes:

\* - Information not available

<sup>1</sup> State of Minnesota Lead Abatement Standard

HRL - Minnesota Department of Health, Health Risk Limit

MCL - Maximum Contaminant Level

ARAR - Applicable or Relevant and Appropriate Requirement

NA - Not analyzed

ND - Not detected

ug/L - micrograms per liter


mg/kg - milligrams per kilogram

## 5.0 CONCLUSIONS

No significant soil and groundwater contamination was found at Site 26. Toluene slightly exceeded the detection limit in a duplicate shallow soil sample but not in the original sample. Low levels of three SVOCs were detected in a near-surface soil sample near the ramp. No concentrations exceeded ARARs for soil or groundwater. The SI recommended no additional investigation or remedial action for Site 26.

6.0 DECISION

Based on the findings of the site investigation, conditions do not pose a health threat at the site; therefore, no remedial action is necessary to ensure protection of human health or the environment at Site 26. This site will be removed from further consideration in the IRP process, and no further investigative or remedial activities will be conducted with regard to Site 26.

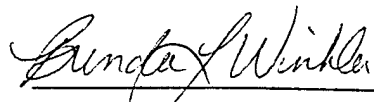
  
\_\_\_\_\_  
Chief, Environmental Division

11 Apr 98  
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Date

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Minnesota Pollution Control Agency

- Concur  
 Non-Concur (please provide reason)

  
\_\_\_\_\_  
Signature

Project Manager  
\_\_\_\_\_  
Title

4/28/98  
\_\_\_\_\_  
Date

## 7.0 REFERENCES

Operational Technologies Corporation (OpTech), 1993. Installation Restoration Program, Preliminary Assessment of the 148th Fighter Group Report, 148th Fighter Group, Minnesota Air National Guard, Duluth Air National Guard Base, Duluth, Minnesota.

Operational Technologies Corporation (Optech), 1996. Site Investigation Report for IRP Sites No. 25 and No. 26, 148th Fighter Wing, Minnesota Air National Guard, Duluth Air National Guard Base, Duluth, Minnesota. June.