

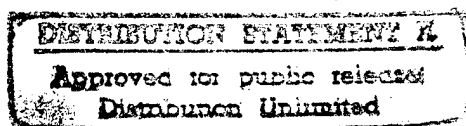
**United States Air Force
611th Air Support Group/
Civil Engineering Squadron**

Elmendorf AFB, Alaska

Final

**Decision Document for
No Further Response Action Planned**

**Wainwright Radar Installation,
Alaska**



19960808 093

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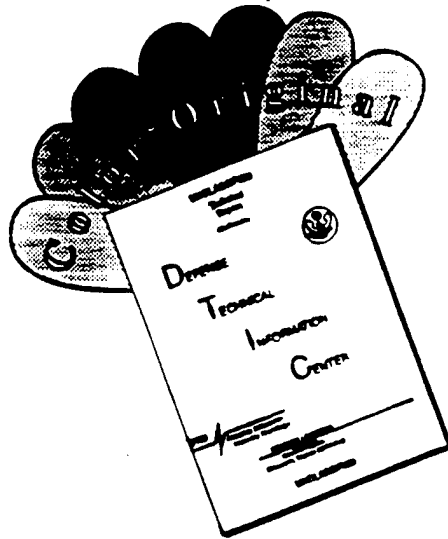
Prepared by:

ICF Technology Incorporated

22 MAY 1996

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PREFACE

This report presents information supporting decisions for no further action at four sites located at the Wainwright radar installation in northern Alaska. The sites were characterized based on sampling and analyses conducted during Remedial Investigation activities performed during August and September 1993. This report meets the requirements of the United States Air Force (Air Force) Installation Restoration Program (IRP) and is designed to comply with all federal, state, and local laws governing the conduct of environmental investigations in Alaska. This report was prepared by ICF Technology Incorporated.

This report was prepared between January and May 1996. Mr. Samer Karmi of the Air Force Center for Environmental Excellence Environmental Restoration Division (AFCEE/ESR) was the Alaska Restoration Team Chief for this task. Dr. Jerome Madden and Mr. Richard Borsetti of the 611th CES/CEVR were the Remedial Project Managers for this project.

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NOTICE

This report has been prepared for the Air Force by ICF Technology Incorporated to support no further action decisions for specified sites under the Air Force Installation Restoration Program (IRP). The limited objectives of this report and the ongoing nature of the IRP, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this report, since subsequent facts may become known which may make this report premature or inaccurate. Acceptance does not mean that the Air Force adopts the conclusions, recommendations or other views expressed herein, which are those of the contractor only and do not necessarily reflect the official position of the Air Force.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
AFCEE/ESR	Air Force Center for Environmental Excellence Environmental Restoration Division
ARAR	Applicable or Relevant and Appropriate Requirement
Air Force	United States Air Force
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Chemicals of Concern
DEW	Distant Early Warning
DRPH	Diesel Range Petroleum Hydrocarbon
DTIC	Defense Technical Information Center
GRPH	Gasoline Range Petroleum Hydrocarbon
IRP	Installation Restoration Program
MOGAS	Motor Vehical Gasoline
RAB	Restoration Advisory Board
RI	Remedial Investigation
SRR	Short Range Radar
TPH	Total Petroleum Hydrocarbon
VOC	Volatile Organic Compound

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1.0 INTRODUCTION

This Decision Document discusses the selection of no further action as the recommended action for four sites located at the Wainwright radar installation. The United States Air Force (Air Force) completed a Remedial Investigation/Feasibility Study and a Risk Assessment for the six sites located at the Wainwright installation (U.S. Air Force 1996a,b). Based on the findings of these activities, four sites are recommended for no further action. Each recommendation for no further action is based on one or more of the following criteria:

- The findings of the Remedial Investigation/Feasibility Study demonstrate that chemical constituents are not present or occur at low concentrations;
- There is no unacceptable risk to potential human or ecological receptors posed by chemical constituents detected at the site; and
- The Air Force was unable to identify a source of suspected contamination during the Remedial Investigation/Feasibility Study process.

The following four sites at the Wainwright radar installation are recommended for no further action:

- Drum Storage (ST02);
- Landfill (LF05);
- Airstrip Diesel (SS08); and
- Vehicle Storage Area (SS09).

The recommendation of no further action is considered to be protective of human health and the environment, to be cost effective, and to meet applicable or relevant and appropriate requirements (ARARs). Sites at the Wainwright installation requiring remedial action or further investigation are addressed in the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a).

The Distant Early Warning (DEW) Line community relations program, which includes the community of Wainwright, was developed to educate the residents on the nature of the Installation Restoration Program (IRP) activities and findings and to ensure the community has input to the decision-making process. The activities include researching, developing, and maintaining a mailing list; producing and distributing fact sheets; and establishing and maintaining administrative records/information repositories at the Elmendorf Air Force Base in Anchorage, the Tuzvy Library in Barrow, Alaska, and the Alak School in the community of Wainwright, Alaska. The Air Force will continue to seek input from the community by organizing a Restoration Advisory Board (RAB) informational meeting and being available for informal visits and small group meetings. The Air Force will broadcast radio announcements, hang posters in public areas, and publish notices announcing RAB informational meetings to inform the community.

In October 1994, a fact sheet was distributed to everyone on the mailing list summarizing public involvement opportunities during the overall remedial action decision making process. The fact sheet provided a brief history of the DEW Line installations, an overview of the IRP, an update on the environmental investigations at each installation, and a description of the Community Relations Plan, including Air Force plans to keep the community informed about environmental activities at the various installations. The fact sheet also provided a general schedule of the process leading up to the public comment period. The Final Remedial Investigation/Feasibility Study, Final Risk Assessment, and Draft Final Decision Document for Wainwright were placed in the information repository for public review in February 1996. A fact sheet explaining the Remedial Investigation/Feasibility Study and Risk Assessment findings was prepared and distributed to individuals on the mailing list. A public comment period on the Draft Final Decision Document was announced via public notice published in the North Slope Sentinel, and via posters mailed to city office. The Air Force received no public response during the formal comment period.

To facilitate public participation, the Final Remedial Investigation/Feasibility Study, Final Risk Assessment, and Draft Final Decision Documents for the Wainwright radar installation were placed in the Administrative Record/Information Repository at the Elmendorf AFB in Anchorage and at the Tuzvy Library in Barrow, Alaska. In addition, the public had the opportunity to review these documents at the Alak School in Wainwright, Alaska. The public comment period for the Draft Final Decision Document for the no further action sites was held from February 9 to March 9, 1996. Individuals who visited the repositories over the course of the public comment period were asked to sign in so the Air Force could determine if the repository was being used. The repository was not visited during the comment period as per the sign in sheet. Questions or comments in regard to information presented in these documents should be addressed to:

Mr. Roger Lucio
Community Relations Coordinator
611 CES/CEVR
6900 - 9th Street, Suite 360
Elmendorf AFB, Alaska 99506-2270
(907) 552-4532 or 1-800-222-4137

1.1 OVERVIEW OF THE WAINWRIGHT RADAR INSTALLATION RESTORATION PROGRAM

The Wainwright radar installation is located at 70°37'N, 150°50'W at the mouth of the Kuk River, on the Chukchi Sea. The installation was constructed as an auxiliary DEW Line station in 1953 and deactivated in 1989. The land is owned by the Air Force, and the station covers approximately 1,191 acres. The construction of a Short Range Radar system at the installation began in 1992, and the unmanned radar system was operational in 1994. The station is located about 4.5 miles from the village of Wainwright, Alaska, which had a population of 584 in 1993, of which 90 percent was Inupiat (Northern Eskimo) (Harcharek 1994). Upgradient of the installation and village is a freshwater lake used as a drinking supply for the village of Wainwright.

2

LEGEND

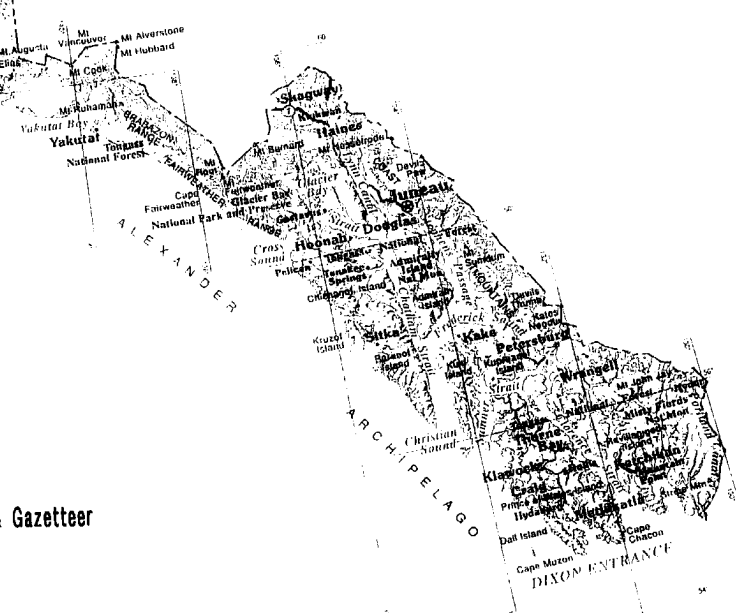
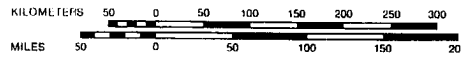
▲ RADAR SITE

ALASKA REMOTE RADAR INSTALLATION

USAF 611th CES

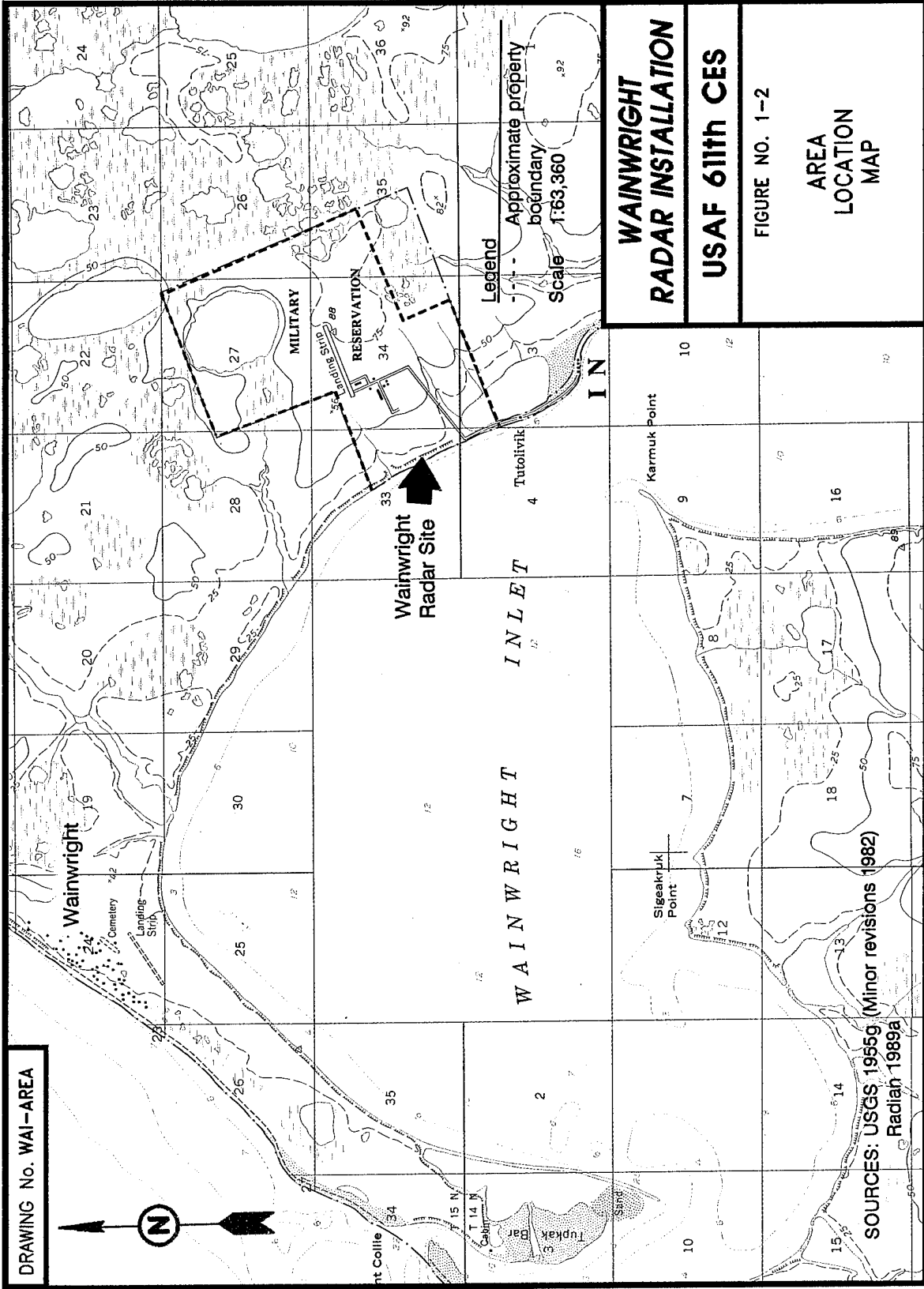
FIGURE NO. 1-1

GENERAL
LOCATION
MAP



Source: Alaska Atlas & Gazetteer

DRAWING No. WAI-AREA



Legend
 - - - - - Approximate property boundary
 Scale 1:63,360

**WAINWRIGHT
 RADAR INSTALLATION**

USAF 611th CES

FIGURE NO. 1-2
 AREA
 LOCATION
 MAP

SOURCES: USGS, 1955g (Minor revisions 1982)
 Radiah 1989a

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The Air Force initiated IRP activities at the Wainwright radar installation in 1980 in response to the Department of Defense's commitment to identify past waste disposal sites and eliminate hazards to public health. The initial Phase I assessment conducted by the Air Force in 1980 concluded that past waste management activities at the installation may have resulted in adverse environmental impacts at several sites (CH2M Hill 1981).

In January 1987, an Air Force contractor released the Environmental Assessment for North Warning System (Alaska) (Hart Crowser 1987). The assessment, although not an IRP activity, discussed the impacts of the construction of a short range radar (SRR) station at the Wainwright DEW Line installation.

An Air Force contractor released the Final Technical Support Document for the Record of Decision, LIZ-3 DEW Line site in 1987 (Woodward-Clyde 1987). The Record of Decision, applicable to five potential hazardous waste sites identified at the Wainwright installation, called for no further action with regard to investigation or cleanup, based on the assessment that there is no significant impact on human health or the environment from suspected or confirmed past contamination at the installation.

In 1989, implementation of plans for the scheduled closure of the Wainwright installation were initiated. In conjunction with the proposed station closure, an Air Force contractor released an Environmental Impact Assessment for the Wainwright Installation (Radian 1989). The Environmental Impact Assessment involved a records search, interviews with installation personnel, photos, an installation survey, an electromagnetic survey to detect buried metal objects, and soil and standing water analyses for heavy metals, hydrocarbons, VOCs, and polychlorinated biphenyls. The installation was scheduled for closure in September 1989.

In preparation for construction activities associated with proposed radar stations at Wainwright, an Air Force contractor conducted a hydrocarbon soil sampling program (ENSR 1992). A total of 441 screening samples and 68 analytical samples were taken at the formerly active Wainwright installation. Petroleum hydrocarbons were detected in some soil samples; complete results are described in the report.

The Air Force conducted Remedial Investigation/Feasibility Study field activities at the Wainwright radar installation during 1993. The objectives of these activities were to confirm the presence or absence of chemical contamination at specific areas of the installation; define the extent and magnitude of confirmed chemical releases; gather adequate data to determine the magnitude of potential risks to human health and the environment; and gather adequate data to identify and select the appropriate remedial actions for sites where apparent risks exceed acceptable limits.

The Final Wainwright Remedial Investigation/Feasibility Study was completed in January 1996 (U.S. Air Force 1996a).

Once the data had been validated and compiled, the Air Force conducted human and ecological risk assessments to evaluate the human health and ecological risks that may be associated with chemicals released to the environment. The risk assessments characterized the probability that measured concentrations of hazardous chemical substances will cause adverse effects in

humans or the environment in the absence of remediation. The risk assessment is used in conjunction with state and federal standards and/or guidance to determine if site remediation is warranted. The Final Wainwright Risk Assessment was completed in January 1996 (U.S. Air Force 1996b).

Based on the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and Final Wainwright Risk Assessment (U.S. Air Force 1996b), remedial actions are recommended at two of the six sites, and no further action is recommended at the remaining four sites.

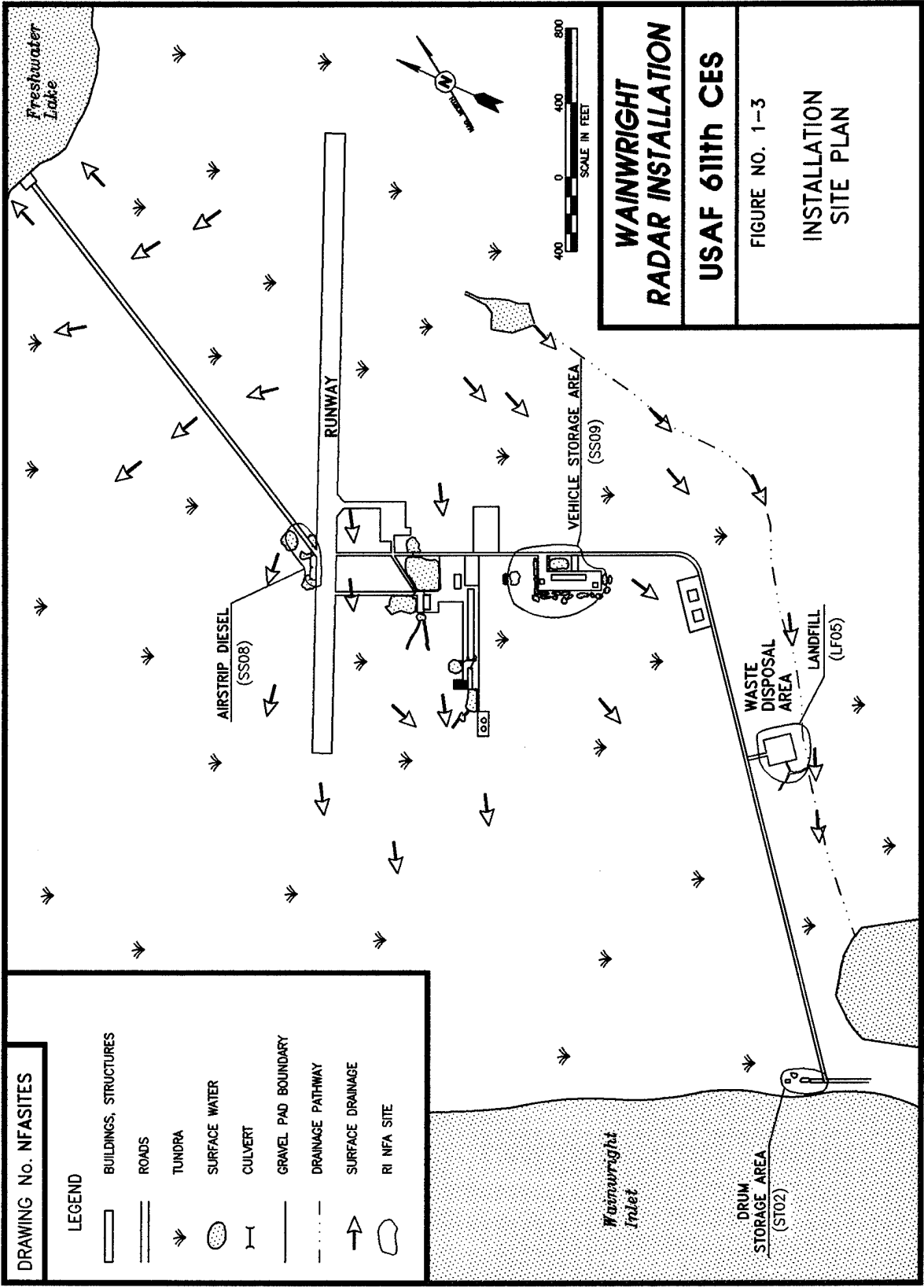
1.2 DECISION DOCUMENT ORGANIZATION

Section 1.0 of this decision document presents general information regarding the Wainwright radar installation, past environmental investigations, and community involvement activities conducted by the Air Force. Sections 2.0 through 5.0 present the Decision Documents for the four no further action sites. These sections are intended to be stand-alone documents summarizing information from the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment Report (U.S. Air Force 1996b). Table 1-1 presents the four sites and the section of this document applicable to each site. The locations of the four sites recommended for no further action are presented in Figure 1-3.

The organization of Sections 2.0 through 5.0 was developed based on guidance received from the ADEC. Each section includes a Declaration of Decision that contains a Statement of Basis, a Description of the Selected Remedy, a Declaration, and signature pages for ADEC and Air Force representatives. The Declaration of Decision is followed by information to support the Decision Document including site identification and history, investigation findings, results of the risk assessment, the selected remedial action, and references used to support the Decision Document.

TABLE 1-1. WAINWRIGHT NO FURTHER ACTION SITES

SITE NAME	SITE NUMBER	SECTION NUMBER
Drum Storage Area	ST02	2.0
Landfill	LF05	3.0
Airstrip Diesel	SS08	4.0
Vehicle Storage Area	SS09	5.0



**WAINWRIGHT
RADAR INSTALLATION**

USAF 611th CES

FIGURE NO. 1-3

INSTALLATION
SITE PLAN

DRAWING No. NFASITES

LEGEND	
[Symbol: Solid rectangle]	BUILDINGS, STRUCTURES
[Symbol: Double line]	ROADS
[Symbol: Arrowhead]	TUNDRA
[Symbol: Oval with horizontal line]	SURFACE WATER
[Symbol: T-shaped symbol]	CULVERT
[Symbol: Dashed line]	GRAVEL PAD BOUNDARY
[Symbol: Dotted line]	DRAINAGE PATHWAY
[Symbol: Arrow]	SURFACE DRAINAGE
[Symbol: Oval]	RI NFA SITE

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1.3 REFERENCES

- CH2M Hill. 1981. Installation Restoration Program Search, Alaska Dewline Stations. Prepared for the United States Air Force.
- Dames and Moore. 1987. Installation Restoration Program, Phase II, Stage 2 - Confirmation/Quantification. Prepared for USAFOEHL/TS.
- ENSR. 1992. Hydrocarbon Screening at Proposed North Warning Radar Station: Wainwright, Point Lonely, and Bullen Point, Alaska. Appendices A, B, and C.
- Delmore Mapping. 1992. Alaska Atlas and Gazetter. First Edition. Second Printing.
- Harcharek, R. 1994. North Slope Borough 1993/1994 Economic Profile and Census Report. Department of Planning and Community Services, North Slope Borough, Barrow, Alaska.
- Radian. 1989. Environmental Impact Assessment for LIZ-3 Distant Early Warning Radar Station. Wainwright, Alaska.
- U.S. Air Force. 1996a. Final Remedial Investigation and Feasibility Study, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.
- U.S. Air Force. 1996b. Final Risk Assessment for the Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.
- U.S. Geological Survey. 1955 (minor revisions 1982). Wainwright (C-2) Quadrangle, Alaska - North Slope Borough, 1:63,360 Series (Topographic).
- Woodward-Clyde. 1987. Technical Support Document for Record of Decision, LIZ-3 DEW Line Site. Final Report.

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**DECISION DOCUMENT FOR
NO FURTHER RESPONSE ACTION PLANNED
WAINWRIGHT RADAR INSTALLATION**

SECTION 2.0

<u>SITE NUMBER</u>	<u>SITE NAME</u>
ST02	Drum Storage Area

2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 1 of 6

SITE NAME AND LOCATION

Site Number: ST02
Site Name: Drum Storage Area
Location: Wainwright Radar Installation, Alaska

STATEMENT OF BASIS

This decision is based on the results of Installation Restoration Program (IRP) investigations including records searches, field investigations, and data analyses, and the human health and ecological risk assessments prepared with information gained from the 1993 Remedial Investigation (RI). Based on the results of soil sampling for inorganics and organics and the completion of a human health and ecological risk assessment, potential adverse effects to human and ecological receptors resulting from conditions at the Drum Storage Area, site ST02, are not expected. The information on which the decision is based is available to the public in administrative records/information repositories. The information available includes the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

DESCRIPTION OF THE SELECTED REMEDY

Based on the current conditions at the Drum Storage Area (ST02), it has been determined that no significant risk or threat to public health or the environment exists. Therefore, no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, is required.

DECLARATION

This Decision Document presents the selected remedy for the site developed in accordance with CERCLA (as amended by the Superfund Amendments and Reauthorization Act of 1986), the National Contingency Plan, the regulations of the State of Alaska Department of Environmental Conservation (ADEC), and the United States Air Force (Air Force) IRP. It has been determined that no further action is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost effective. The statutory preference for further treatment is not satisfied because further treatment was not found to be necessary. Contaminant levels at the site have been determined to present no significant threat to human health or the environment; therefore, no treatment is necessary.

2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 2 of 6

This decision does not preclude future remedial or site investigations if information indicates that there is previously undiscovered contamination or exposures that may cause risk to human health or the environment. The ADEC reserves all of its rights to request additional activities in the future, if necessary.

2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 3 of 6

UNITED STATES AIR FORCE

Signature: _____
Name: Samuel C. Johnson, III, Colonel, USAF
Commander, 611th Air Support Group

Date: _____

2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 4 of 6

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2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 5 of 6

REVIEW AND CONCURRENCE: STATE OF ALASKA, DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

Signature: _____ Date: _____
Kurt Fredriksson
Director, Division of Spill Prevention and Response

2.0 DECLARATION OF DECISION
Drum Storage Area (ST02)
Page 6 of 6

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2.1 DECISION DOCUMENT SUPPORT

The following sections summarize the site history, sample analyses, human health and ecological risk assessments, public involvement, and selected action and decision for the Drum Storage Area, site ST02.

2.1.1 Site History

Drum Storage Area (ST02) is a gravel pad located southwest of the main station adjacent to the lagoon at the end of the access road (Figure 2-1). Approximately fifteen 55-gallon drums are present at the site. Most of the drums at the site are empty; others contain rainwater. A platform support structure exists at the south end of the site, and solidified bags of concrete and wood debris remain along the beach and at the north end of the site. The site was used for temporary storage of drummed products. Campfire ashes located in the middle of the gravel pad indicate the site may have been used by the residents of Wainwright.

2.1.2 Sample Analyses Summary

The Air Force had not conducted sampling and analysis at the Drum Storage Area (ST02) prior to the 1993 RI. During the 1993 RI, the Air Force collected five soil samples from the gravel pad at the site. One organic compound, a common laboratory contaminant, was detected in two samples at similar concentrations to the background samples. It was also detected in the laboratory blank associated with the affected samples, and probably represents cross-contamination at the laboratory during analysis.

Four metals (cobalt, iron, magnesium, and sodium) were detected above background levels in one soil sample; however, concentrations did not exceed levels of concern. The one organic compound detected at low levels is a common laboratory contaminant; however, it was detected well below both the associated risk-based screening level (RBSL) and Applicable or Relevant and Appropriate Requirement (ARAR). Sample locations and results are shown in Figure 2-2.

Sampling and analysis have determined that the Drum Storage Area (ST02) site is not contaminated. Some metals (inorganics) were detected above background in soil; however, none exceed an RBSL or ARAR or are considered to be a chemical of concern (COC) in the human health risk assessment. Although there was a potential risk identified to ecological receptors due to iron in soil, there are several mitigating factors that result in a low risk estimate to ecological receptors from iron at the Drum Storage Area (U.S. Air Force 1996b). Because no contaminant was detected at a level of concern at the site, there appears to be no potential for contaminant migration or risks posed by the site to human health or ecological receptors.

2.1.3 Risk Assessment Summary

The Final Wainwright Risk Assessment (U.S. Air Force 1996b) concluded that risks posed to human and ecological receptors by site contaminants are minimal given current or future site uses. No COCs were selected at this site in the human health risk assessment; therefore, there appears to be no human health risks posed by the site. A potential ecological risk was identified

in soil due to the levels of iron, which exceed background levels; however, the potential risk was calculated conservatively and is likely to be overestimated.

Based on the 1993 RI sampling and analyses, risk assessment, and current or future site uses, remedial actions are not warranted at the site. No chemicals detected at the site exceed ARARs, and no significant human health or ecological risks were identified at the site. Therefore, the Drum Storage Area (ST02) is recommended for no further action.

2.2 PUBLIC INVOLVEMENT AND COMMENT

Community relations activities that have taken place for the Wainwright radar installation include the following: residents of Wainwright were interviewed by Air Force community relations personnel on 24 June, 1993; a mailing list of residents of Wainwright is being maintained by the 611th CES/CEVR; a fact sheet describing the status of the Installation Restoration Program at the radar installation was distributed to the mailing list on October 1994; a fact sheet was distributed to the mailing list during August 1995 explaining the Restoration Advisory Board (RAB) and how community residents could become RAB members; two RAB meetings were held in Barrow, Alaska in 1995; public notices were published in February 1996 regarding the decision for no further action at the Drum Storage Area (ST02); fact sheets were sent to all residents on the mailing list during early February 1996 describing the sites recommended for no further action at the Wainwright radar installation; a public review and comment period on the Draft Final Decision Document for no further action sites was held from February 9 to March 9, 1996; and documents have been, and will continue to be, available for review at the Alak School in Wainwright, Alaska, Tuzvy Library in Barrow, Alaska, and Elmendorf Air Force Base in Anchorage, Alaska since February 1996. The Air Force has received no public comments in response to the fact sheets, public notices distributed to date, or during the format public comment period.

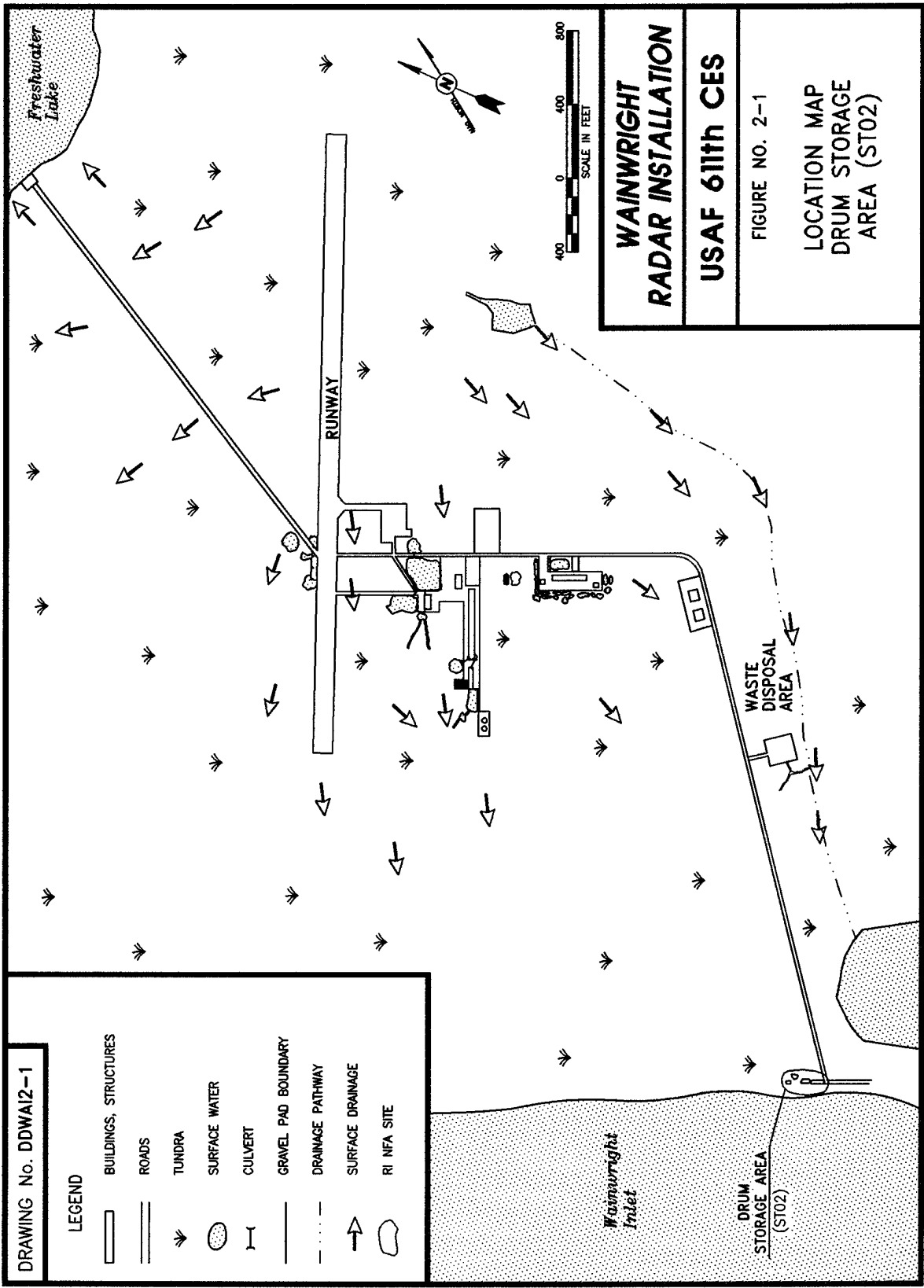
To facilitate public participation the Air Force plans to conduct a RAB informational meeting during 1996.

2.3 SELECTED ACTION AND DECISION

The selected action and decision for the Drum Storage Area (ST02) is no further action. This action is consistent with the requirements of ADEC, the Air Force, and federal regulations regarding the remediation of hazardous waste sites. This decision is based on the conclusions provided above and the supporting documentation contained in the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

DRAWING No. DDWAI2-1

- LEGEND
- BUILDINGS, STRUCTURES
 - ROADS
 - TUNDRA
 - SURFACE WATER
 - CULVERT
 - GRAVEL PAD BOUNDARY
 - DRAINAGE PATHWAY
 - SURFACE DRAINAGE
 - RI NFA SITE



**WAINWRIGHT
RADAR INSTALLATION**

USAF 611th CES








FIGURE NO. 2-1

LOCATION MAP
DRUM STORAGE
AREA (ST02)

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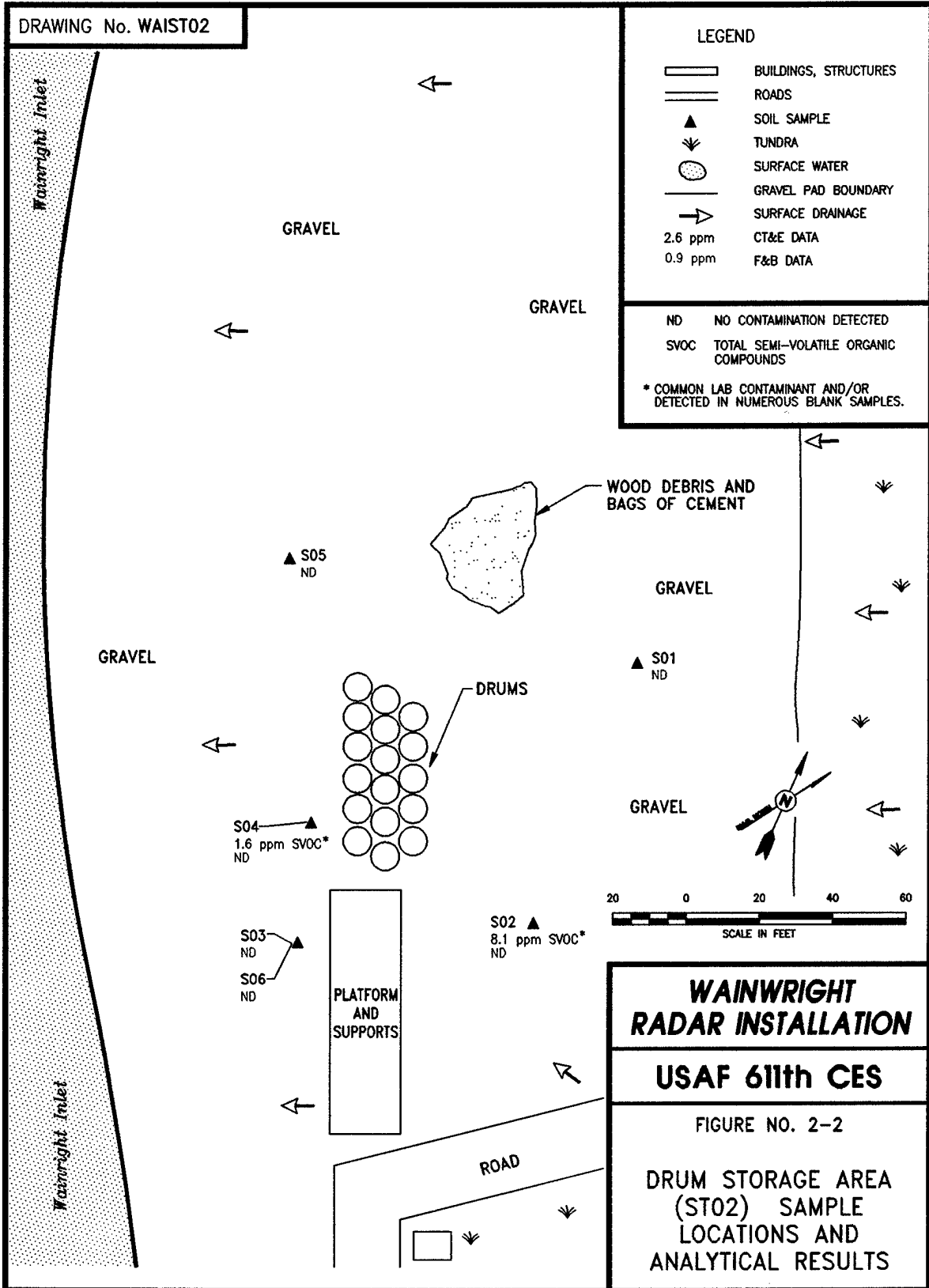
DRAWING No. WAIST02

LEGEND

-  BUILDINGS, STRUCTURES
-  ROADS
-  SOIL SAMPLE
-  TUNDRA
-  SURFACE WATER
-  GRAVEL PAD BOUNDARY
-  SURFACE DRAINAGE
- 2.6 ppm CT&E DATA
- 0.9 ppm F&B DATA

ND NO CONTAMINATION DETECTED
 SVOC TOTAL SEMI-VOLATILE ORGANIC COMPOUNDS

* COMMON LAB CONTAMINANT AND/OR DETECTED IN NUMEROUS BLANK SAMPLES.



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2.4 REFERENCES

U.S. Air Force. 1996a. Final Remedial Investigation and Feasibility Study, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

U.S. Air Force. 1996b. Final Risk Assessment for the Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

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DECISION DOCUMENT FOR
NO FURTHER RESPONSE ACTION PLANNED
WAINWRIGHT RADAR INSTALLATION

SECTION 3.0

<u>SITE NUMBER</u>	<u>SITE NAME</u>
LF05	Landfill

3.0 DECLARATION OF DECISION

Landfill (LF05)

Page 1 of 6

SITE NAME AND LOCATION

Site Number: LF05

Site Name: Landfill

Location: Wainwright Radar Installation, Alaska

STATEMENT OF BASIS

This decision is based on the results of Installation Restoration Program (IRP) investigations including records searches, field investigations, and data analyses, and the human health and ecological risk assessments prepared with information gained from the 1993 Remedial Investigation (RI). Based on the results of soil, surface water, and sediment sampling for inorganics and organics and the completion of a human health and ecological risk assessment, potential adverse effects to human and ecological receptors resulting from conditions at the Landfill, site LF05, are not expected. The information on which the decision is based is available to the public in administrative records/information repositories. The information available includes the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

DESCRIPTION OF THE SELECTED REMEDY

Based on the current conditions at the Landfill (LF05), it has been determined that no significant risk or threat to public health or the environment exists. Therefore, no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, is required.

DECLARATION

This Decision Document presents the selected remedy for the site developed in accordance with CERCLA (as amended by the Superfund Amendments and Reauthorization Act of 1986), the National Contingency Plan, the regulations of the State of Alaska Department of Environmental Conservation (ADEC), and the United States Air Force (Air Force) IRP. It has been determined that no further action is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost effective. The statutory preference for further treatment is not satisfied because further treatment was not found to be necessary. Contaminant levels at the site have been determined to present no significant threat to human health or the environment; therefore, no treatment is necessary.

3.0 DECLARATION OF DECISION
Landfill (LF05)
Page 2 of 6

This decision does not preclude future remedial or site investigations if information indicates that there is previously undiscovered contamination or exposures that may cause risk to human health or the environment. The ADEC reserves all of its rights to request additional activities in the future, if necessary.

3.0 DECLARATION OF DECISION
Landfill (LF05)
Page 3 of 6

UNITED STATES AIR FORCE

Signature: _____
Name: Samuel C. Johnson, III, Colonel, USAF
Title: Commander, 611th Air Support Group

Date: _____

3.0 DECLARATION OF DECISION
Landfill (LF05)
Page 4 of 6

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3.0 DECLARATION OF DECISION
Landfill (LF05)
Page 5 of 6

REVIEW AND CONCURRENCE: STATE OF ALASKA, DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

Signature: _____

Date: _____

Kurt Fredericksson
Director, Division of Spill Prevention
and Response

3.0 DECLARATION OF DECISION
Landfill (LF05)
Page 6 of 6

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3.1 DECISION DOCUMENT SUPPORT

The following sections summarize the site history, sample analyses, human health and ecological risk assessments, public involvement, and selected action and decision for the Landfill, site LF05.

3.1.1 Relevant Site History

Landfill (LF05) is located on the tundra, which gently slopes to the Kuk River, approximately 800 feet southwest of the motor vehicle gasoline (MOGAS) tanks on the south end of the main station area. The inactive Landfill covers approximately half an acre and is covered with gravel to a depth of approximately four feet. The Landfill received all wastes generated at the station between approximately 1974 and 1989.

3.1.2 Sample Analysis Summary

Historic sampling conducted at the Landfill (LF05) (Radian 1989) identified contaminants in soil and surface water. Arsenic and total petroleum hydrocarbons (TPH) were detected at concentrations exceeding background levels in one soil sample. Lead and three volatile organic compounds (VOCs) were detected in one surface water sample collected from the drainage pathways bordering the southern perimeter of the landfill. Historic sampling encompassed two samples collected from one location at the Landfill. A summary of sample analytical results for historic investigations is presented in Table 3-1.

During the 1993 RI, the Air Force collected nine samples from gravel pads, tundra, and streams at the Landfill (LF05). Samples consisted of four soil, two sediment, and two surface water samples. Soil/sediment samples contained low levels of diesel and gasoline range petroleum hydrocarbons (DRPH and GRPH), benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds and one other VOC. In addition, one semi-volatile organic compound detected in soil and VOC detected in surface water samples at low concentrations are probably related to laboratory contamination and field decontamination procedures, respectively. Cadmium in soil was the only inorganic analyte detected at concentrations exceeding background concentration and regulatory action levels. Table 3-2 summarizes the organic chemicals detected above background levels and inorganics detected that were determined to be of concern based on regulatory action levels. Sample locations and results are shown on Figure 3-2.

A comparison of historical and 1993 RI data indicates similar concentrations of petroleum hydrocarbons compounds in soil/sediment and a decrease in the concentrations of VOCs in surface water. Petroleum hydrocarbon identification methods used during the 1993 RI were in accordance with State of Alaska requirements, which report findings as residual, gasoline, or diesel range petroleum hydrocarbons. The sum of gasoline and diesel range petroleum hydrocarbons is comparable with petroleum hydrocarbon analyses conducted during historic investigations. The suspected source of contaminants is previous waste disposal activities in the landfill and/or areas to the north of the Landfill. The Landfill is no longer active.

Sampling and analyses have determined that there is no significant contamination at the Landfill (LF05) site; only relatively low levels of contaminants were detected. Migration of contaminants

TABLE 3-1. SUMMARY OF HISTORIC SAMPLING AT THE LANDFILL (LF05)

CHEMICAL	SAMPLE MEDIA	MAXIMUM CONCENTRATION	NUMBER OF DETECTIONS
TPH ^a	Soil	260 mg/kg	1
Arsenic	Soil	7.5 mg/kg	1
Acetone	Surface water	2,000 µg/L	1
Toluene	Surface water	87 µg/L	1
Xylenes	Surface water	440 µg/L	1
Lead	Surface water	62 µg/L	1

^a Total Petroleum Hydrocarbons.

TABLE 3-2. SUMMARY OF 1993 REMEDIAL INVESTIGATION SAMPLING AT THE LANDFILL (LF05)

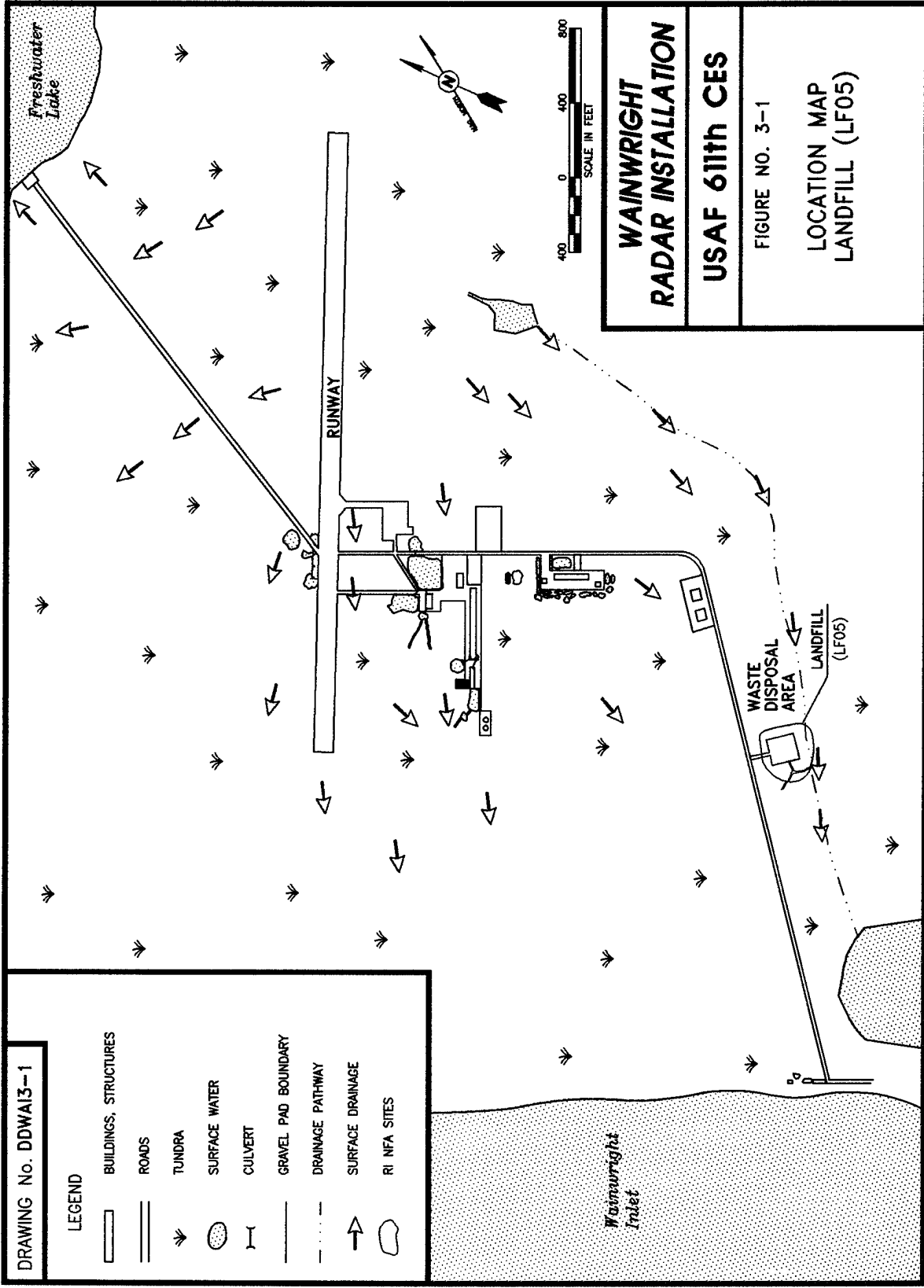
CHEMICAL	SAMPLE MEDIA	MAXIMUM CONCENTRATION	NUMBER OF DETECTIONS
DRPH ^a	Soil	60 mg/kg	1
GRPH ^b	Soil	200 mg/kg	1
di-n-Butylphthalate	Sediment	37.6 mg/kg	1
Ethylbenzene	Soil	1.5 mg/kg	1
Toluene	Soil	0.205 mg/kg	1
1,3,5-Trimethylbenzene	Soil	0.247 mg/kg	1
Xylenes	Soil	8 mg/kg	1
Cadmium	Soil	72 mg/kg	1
1,2-Dichloroethane	Surface water	6.2 µg/L	1

^a DRPH = Diesel Range Petroleum Hydrocarbons.

^b GRPH = Gasoline Range Petroleum Hydrocarbons.

DRAWING No. DDWAI3-1

- LEGEND
- BUILDINGS, STRUCTURES
 - ROADS
 - TUNDRA
 - SURFACE WATER
 - CULVERT
 - GRAVEL PAD BOUNDARY
 - DRAINAGE PATHWAY
 - SURFACE DRAINAGE
 - RI NFA SITES



**WAINWRIGHT
RADAR INSTALLATION**

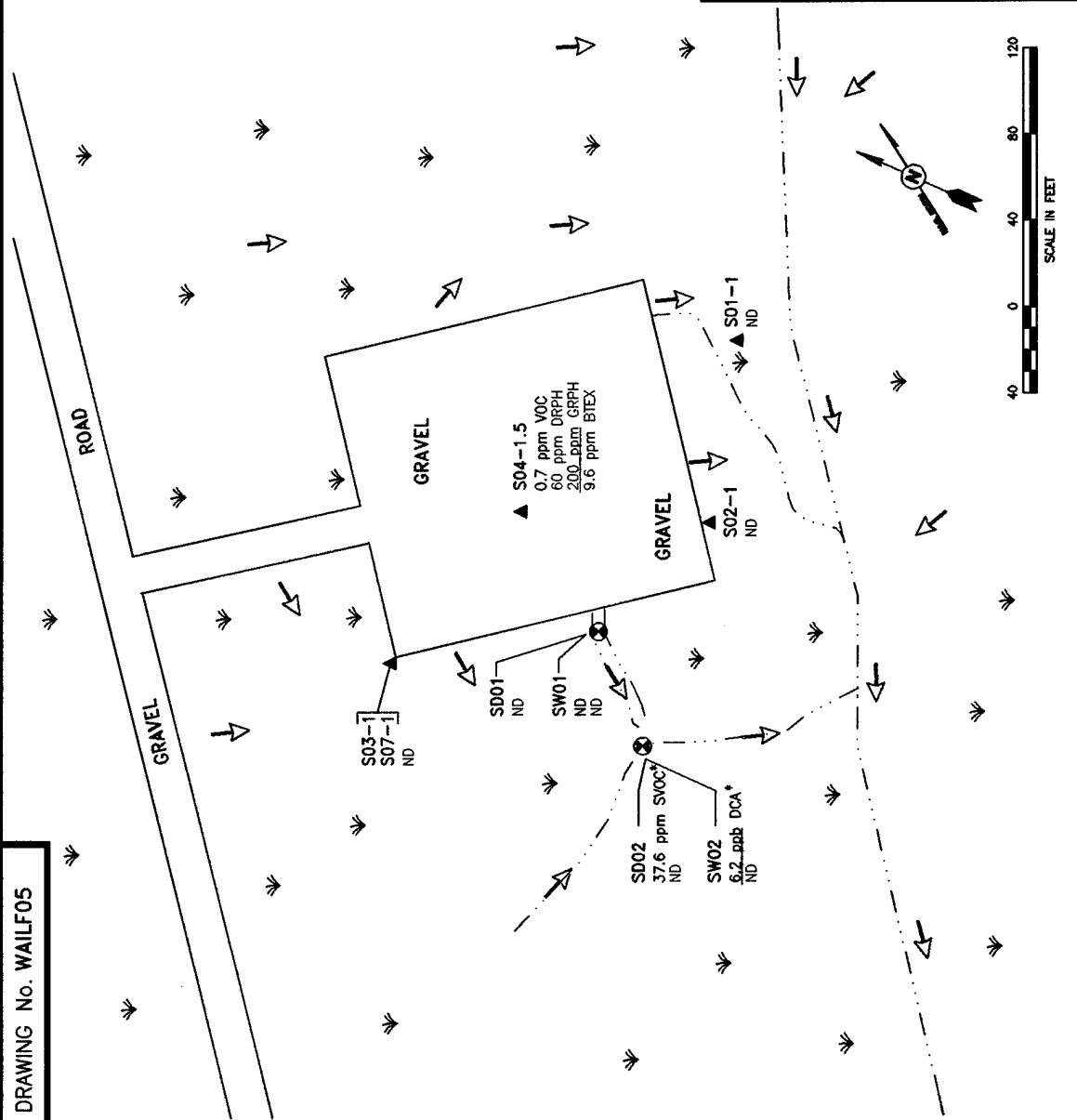
USAF 611th CES

FIGURE NO. 3-1

LOCATION MAP
LANDFILL (LF05)

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DRAWING No. WAILF05



0000 CONCENTRATIONS ARE ABOVE ACTION LEVELS
 ND NO CONTAMINATION DETECTED
 SVOC TOTAL SEMI-VOLATILE ORGANIC COMPOUNDS
 VOC TOTAL VOLATILE ORGANIC COMPOUNDS
 DRPH DIESEL RANGE PETROLEUM HYDROCARBONS
 GRPH GASOLINE RANGE PETROLEUM HYDROCARBONS
 BTEX TOTAL BTEX COMPOUNDS
 DCA 1,2-DICHLOROETHANE
 * COMMON LAB CONTAMINANT AND/OR DETECTED IN NUMEROUS BLANK SAMPLES.

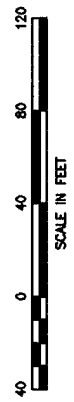
LEGEND

- BUILDINGS, STRUCTURES
- ROADS
- SOIL SAMPLE
- SEDIMENT AND WATER SAMPLES
- TUNDRA
- GRAVEL PAD BOUNDARY
- DRAINAGE PATHWAY
- SURFACE DRAINAGE
- CT&E DATA 2.6 ppm
- F&B DATA 0.9 ppm

WAINWRIGHT RADAR INSTALLATION

USAF 611th CES

FIGURE NO. 3-2
 LANDFILL (LF05)
 SAMPLE LOCATIONS AND ANALYTICAL RESULTS



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from the site appears minimal based on the surface water samples collected in drainage pathways leading from the site.

3.1.3 Risk Assessment Summary

The Final Wainwright Risk Assessment (U.S. Air Force 1996b) concluded that risks posed to human and ecological receptors by site contaminants are minimal given current or future site uses. Even using the conservative future scenario, the potential human health risks at the site are not of a magnitude that normally requires remedial action. Although the RI indicated a low potential risk for ecological receptors from iron in soil, this is based on a very conservative estimate that probably overestimates the risk to representative species. The overall risk to ecological receptors at the site is minimal. Based on the RI sampling and analyses, risk assessment, and current or future site uses, remedial actions are not warranted at the site. No significant human health or ecological risk was identified at the site. Therefore, the Landfill (LF05) site is recommended for no further action.

3.2 PUBLIC INVOLVEMENT

Community relations activities that have taken place for the Wainwright radar installation include the following: residents of Wainwright were interviewed by Air Force community relations personnel on 24 June, 1993; a mailing list of residents of Wainwright is being maintained by the 611th CES/CEVR; a fact sheet describing the status of the Installation Restoration Program at the radar installation was distributed to the mailing list on October 1994; a fact sheet was distributed to the mailing list during August 1995 explaining the Restoration Advisory Board (RAB) and how community residents could become RAB members; two RAB meetings were held in Barrow, Alaska in 1995; public notices were published in February 1996 regarding the decision for no further action at the Landfill (LF05); fact sheets were sent to all residents on the mailing list during early February 1996 describing the sites recommended for no further action at the Wainwright radar installation; a public review and comment period on the Draft Final Decision Document for no further action sites was held from February 9 to March 9, 1996; and documents have been, and will continue to be, available for review at the Alak School in Wainwright, Alaska, Tuzvy Library in Barrow, Alaska, and Elmendorf Air Force Base in Anchorage, Alaska since February 1996. The Air Force has received no public comments in response to the fact sheets, public notices distributed to date, or during the formal public comment period.

To facilitate public participation the Air Force plans to conduct a RAB informational meeting during 1996.

3.3 SELECTED ACTION AND DECISION

The selected action and decision for the Landfill (LF05) is no further action. The action is consistent with the requirements of ADEC, the Air Force, and federal regulations regarding the remediation of hazardous waste sites. This decision is based on the conclusions provided above and the supporting documentation contained in the Final Wainwright Remedial Investigation/

Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

3.4 REFERENCES

U.S. Air Force. 1996a. Final Remedial Investigation and Feasibility Study, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

U.S. Air Force. 1996b. Final Risk Assessment for the Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

Radian Corporation. 1989. Environmental Impact Assessment for LIZ-3 Distant Early Warning Radar Station. Wainwright, Alaska.

DECISION DOCUMENT FOR
NO FURTHER RESPONSE ACTION PLANNED
WAINWRIGHT RADAR INSTALLATION

SECTION 4.0

<u>SITE NUMBER</u>	<u>SITE NAME</u>
SS08	Airstrip Diesel

4.0 DECLARATION OF DECISION

Airstrip Diesel (SS08)

Page 1 of 6

SITE NAME AND LOCATION

Site Number: SS08

Site Name: Airstrip Diesel

Location: Wainwright Radar Installation, Alaska

STATEMENT OF BASIS

This decision is based on the results of Installation Restoration Program (IRP) investigations including records searches, field investigations, data analyses, and information gained from the 1993 Remedial Investigation (RI). Based on the results of surface water and sediment sampling for organic compounds, potential adverse effects to human and ecological receptors resulting from conditions at the Airstrip Diesel, site SS08, are not expected. The information on which the decision is based is available to the public in administrative records/information repositories. The information available includes the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

DESCRIPTION OF THE SELECTED REMEDY

Based on the current conditions at the Airstrip Diesel (SS08), it has been determined that no significant risk or threat to public health or the environment exists. Therefore, no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, is required.

DECLARATION

This Decision Document presents the selected remedy for the site developed in accordance with CERCLA (as amended by the Superfund Amendments and Reauthorization Act of 1986), the National Contingency Plan, the regulations of the State of Alaska Department of Environmental Conservation (ADEC), and the United States Air Force (Air Force) IRP. It has been determined that no further action is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost effective. The statutory preference for further treatment is not satisfied because further treatment was not found to be necessary. Contaminants were not detected at the site; therefore, no treatment is necessary.

This decision does not preclude future remedial or site investigations if information indicates that there is previously undiscovered contamination or exposures that may cause risk to human health or the environment. The ADEC reserves all of its rights to request additional activities in the future, if necessary.

4.0 DECLARATION OF DECISION
Airstrip Diesel (SS08)
Page 2 of 6

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4.0 DECLARATION OF DECISION
Airstrip Diesel (SS08)
Page 3 of 6

UNITED STATES AIR FORCE

Signature: _____
Name: Samuel C. Johnson, III, Colonel, USAF
Title: Commander, 611th Air Support Group

Date: _____

4.0 DECLARATION OF DECISION
Airstrip Diesel (SS08)
Page 4 of 6

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4.0 DECLARATION OF DECISION
Airstrip Diesel (SS08)
Page 5 of 6

REVIEW AND CONCURRENCE: STATE OF ALASKA, DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

Signature: _____

Date: _____

Kurt Fredriksson
Director, Division of Spill Prevention
and Response

**4.0 DECLARATION OF DECISION
Airstrip Diesel (SS08)
Page 6 of 6**

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4.1 DECISION DOCUMENT SUPPORT

The following sections summarize the site history, sample analyses, human health and ecological risk assessments, public involvement, and selected action and decision for the Airstrip Diesel, site SS08.

4.1.1 Relevant Site History

The Airstrip Diesel (SS08) site is located adjacent to the north side of the airstrip at the junction of the road to Freshwater Lake (Figure 4-1). The area consists of tundra and a gravel pad elevated approximately four feet above the adjacent tundra. A helicopter pad was under construction at this site during the 1993 field sampling season.

4.1.2 Sample Analyses Summary

Historic sampling conducted in 1992 at the Airstrip Diesel (SS08) site detected diesel range organics in a soil sample (ENSR 1992); however, it appears to be very limited in extent and/or biogenic in nature. No previous surface water sampling was conducted at the site. A summary of sample analytical results for historic investigations is presented in Table 4-1.

During the 1993 Remedial Investigation/Feasibility Study, the Air Force collected a total of seven samples from ponded areas at the site (Figure 4-2). Samples consisted of four sediment and three surface water samples. No organic compound was detected in sediment or surface water samples collected from the Airstrip Diesel (SS08) site. Metals were not a concern at this site; therefore, no metals analysis was performed.

A comparison of historical and 1993 RI data indicates that concentrations of petroleum compounds in surface water at the Airstrip Diesel site has decreased to below detection levels.

RI sampling and analyses have determined that the Airstrip Diesel (SS08) site is not contaminated. No contaminant was detected in the seven RI samples from the site; therefore, risk to human health and the environment is not a concern because there is no contaminant to evaluate. The one previous detection of diesel range organic compounds appears to have been very limited in extent and/or biogenic in nature.

TABLE 4-1. SUMMARY OF HISTORIC SAMPLING AT THE AIRSTRIP DIESEL (SS08)

CHEMICAL	SAMPLE MEDIA	MAXIMUM CONCENTRATION	NUMBER OF DETECTIONS
DRO ^a	Soil	824 mg/kg	1

^a DRO = Diesel Range Organics.

4.1.3 Risk Assessment Summary

Based on the RI sampling and analysis, a risk assessment was not conducted at this site. Since no chemicals were detected at the site, there appears to be no potential for human health or ecological risks posed by the site (U.S. Air Force 1996b). Therefore, the Airstrip Diesel (SS08) site is recommended for no further action.

4.2 PUBLIC INVOLVEMENT AND COMMENT

Community relations activities that have taken place for the Wainwright radar installation include the following: residents of Wainwright were interviewed by Air Force community relations personnel on 24 June, 1993; a mailing list of residents of Wainwright is being maintained by the 611th CES/CEVR; a fact sheet describing the status of the Installation Restoration Program at the radar installation was distributed to the mailing list on October 1994; a fact sheet was distributed to the mailing list during August 1995 explaining the Restoration Advisory Board (RAB) and how community residents could become RAB members; two RAB meetings were held in Barrow, Alaska in 1995; public notices were published in February 1996 regarding the decision for no further action at the Airstrip Diesel (SS08); fact sheets were sent to all residents on the mailing list during early February 1996 describing the sites recommended for no further action at the Wainwright radar installation; a public review and comment period on the Draft Final Decision Document for no further action sites was held from February 9 to March 9, 1996; and documents have been, and will continue to be, available for review at the Alak School in Wainwright, Alaska, Tuzvy Library in Barrow, Alaska, and Elmendorf Air Force Base in Anchorage, Alaska, since February 1996. The Air Force has received no public comments in response to the fact sheets, public notices distributed to date, or during the formal public comment period.

To facilitate public participation the Air Force plans to conduct a RAB informational meeting during 1996.

4.3 SELECTED ACTION AND DECISION

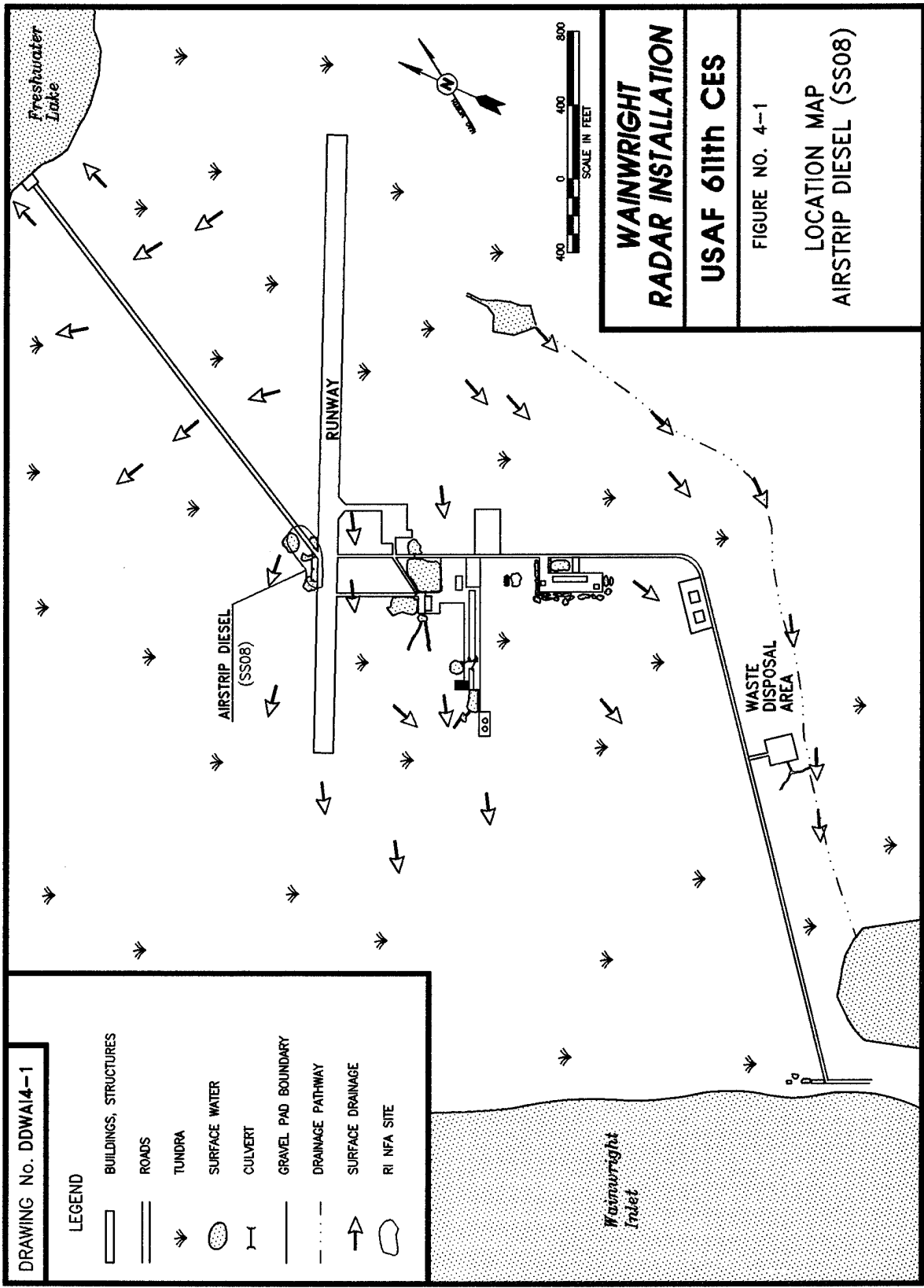
The selected action and decision for the Airstrip Diesel (SS08) is no further action. The action is consistent with the requirements of ADEC, the Air Force, and federal regulations regarding the remediation of hazardous waste sites. This decision is based on the conclusions provided above and the supporting documentation contained in the Final Wainwright Remedial Investigation/ Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

4.4 REFERENCES

ENSR. 1992. Hydrocarbon Screening at Proposed North Warning Radar Stations: Wainwright, Lonely, and Bullen Point, Alaska. Appendices A, B, and C.

DRAWING No. DDWA14-1

- LEGEND
- BUILDINGS, STRUCTURES
 - ROADS
 - TUNDRA
 - SURFACE WATER
 - CULVERT
 - GRAVEL PAD BOUNDARY
 - DRAINAGE PATHWAY
 - SURFACE DRAINAGE
 - RI NFA SITE



**WAINWRIGHT
RADAR INSTALLATION**

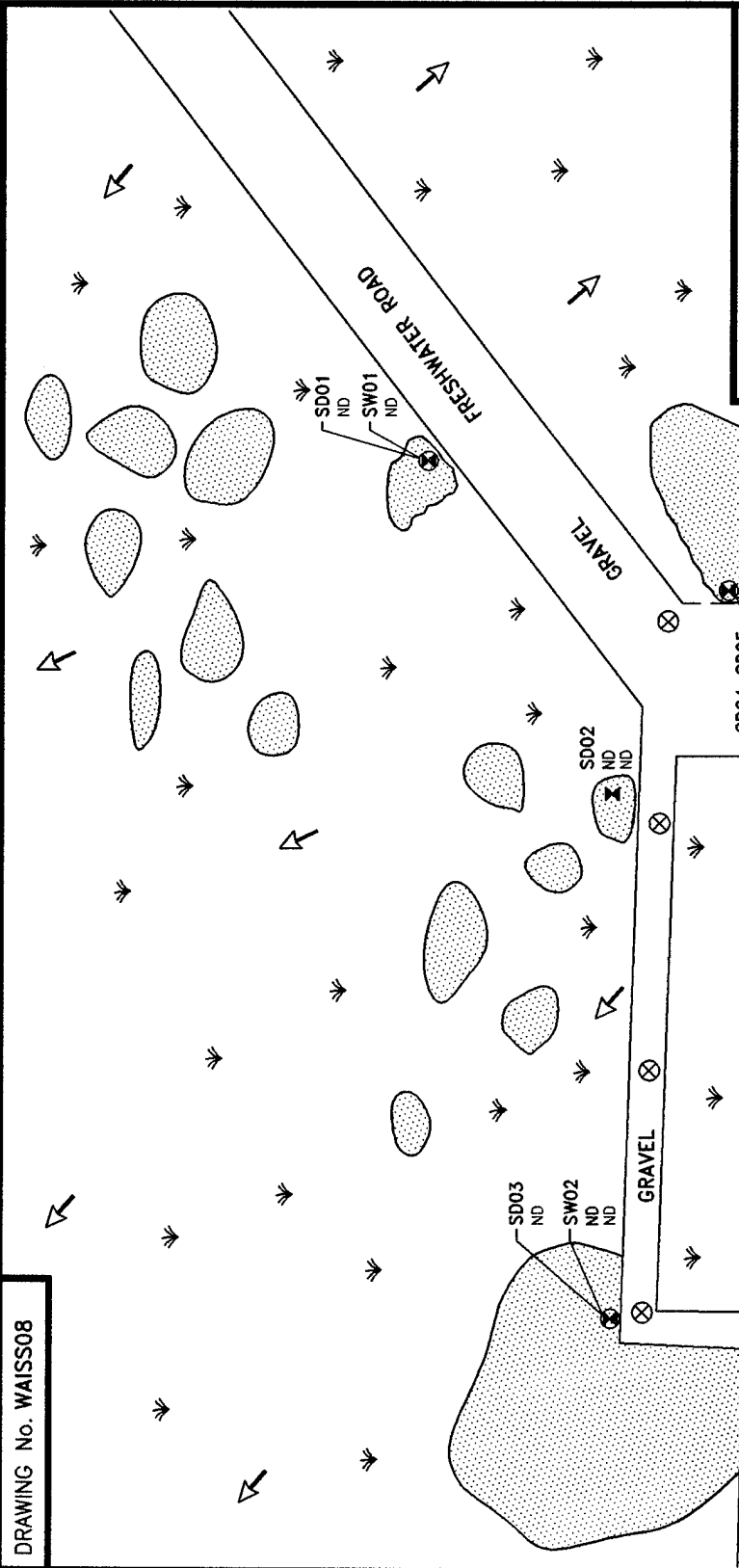
USAF 611th CES

FIGURE NO. 4-1

LOCATION MAP
AIRSTRIP DIESEL (SS08)

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DRAWING No. WAISS08

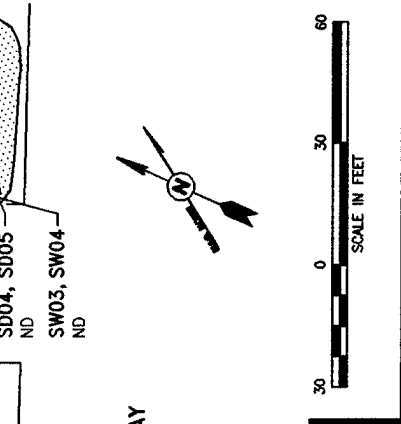


**WAINWRIGHT
RADAR INSTALLATION**

USAF 611th CES

FIGURE NO. 4-2

**AIRSTRIIP DIESEL (SS08)
SAMPLE LOCATIONS
AND
ANALYTICAL RESULTS**



NO CONTAMINATION DETECTED

ND NO CONTAMINATION DETECTED

LEGEND

[Symbol]	BUILDINGS, STRUCTURES
[Symbol]	ROADS
[Symbol]	SEDIMENT SAMPLE
[Symbol]	SEDIMENT AND WATER SAMPLES
[Symbol]	UTILITY POST
[Symbol]	TUNDRA
[Symbol]	SURFACE WATER
[Symbol]	GRAVEL PAD BOUNDARY
[Symbol]	SURFACE DRAINAGE
[Symbol]	2.6 ppm
[Symbol]	0.9 ppm

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U.S. Air Force. 1996a. Final Remedial Investigation and Feasibility Study, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

U.S. Air Force. 1996b. Final Risk Assessment for the Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

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**DECISION DOCUMENT FOR
NO FURTHER RESPONSE ACTION PLANNED
WAINWRIGHT RADAR INSTALLATION**

SECTION 5.0

<u>SITE NUMBER</u>	<u>SITE NAME</u>
SS09	Vehicle Storage Area

5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 1 of 6

SITE NAME AND LOCATION

Site Number: SS09
Site Name: Vehicle Storage Area
Location: Wainwright Radar Installation, Alaska

STATEMENT OF BASIS

This decision is based on the results of Installation Restoration Program (IRP) investigations including records searches, field investigations, and data analyses, and the human health and ecological risk assessments prepared with information gained from the 1993 Remedial Investigation (RI). Based on the results of soil, sediment, and surface water sampling for inorganic and organic compounds and the completion of a human health and ecological risk assessment, potential adverse effects to human and ecological receptors resulting from conditions at the Vehicle Storage Area, site SS09, are not expected. The information on which the decision is based is available to the public in administrative records/information repositories. The information available includes the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

DESCRIPTION OF THE SELECTED REMEDY

Based on the current conditions at the Vehicle Storage Area (SS09), it has been determined that no significant risk or threat to public health or the environment exists. Therefore, no further action under the Comprehensive Environmental Response, Compensation, Liability Act (CERCLA), as amended, is required.

DECLARATION

This Decision Document presents the selected remedy for the site developed in accordance with CERCLA (as amended by the Superfund Amendments and Reauthorization Act of 1986), the National Contingency Plan, the regulations of the State of Alaska Department of Environmental Conservation (ADEC), and the United States Air Force (Air Force) IRP. It has been determined that no further action is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost effective. The statutory preference for further treatment is not satisfied because further treatment was not found to be necessary. Contaminant levels at the site have been determined to present no significant threat to human health or the environment; therefore, no treatment is necessary.

5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 2 of 6

This decision does not preclude future remedial or site investigations if information indicates that there is previously undiscovered contamination or exposures that may cause risk to human health or the environment. The ADEC reserves all of its rights to request additional activities in the future, if necessary.

5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 3 of 6

UNITED STATES AIR FORCE

Signature: _____
Name: Samuel C. Johnson, III, Colonel, USAF
Commander, 611th Air Support Group

Date: _____

5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 4 of 6

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5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 5 of 6

REVIEW AND CONCURRENCE: STATE OF ALASKA, DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

Signature: _____ Date: _____
Kurt Fredriksson
Director, Division of Spill Prevention and Response

5.0 DECLARATION OF DECISION
Vehicle Storage Area (SS09)
Page 6 of 6

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5.1 DECISION DOCUMENT SUPPORT

The following sections summarize the site history, sample analyses, human health and ecological risk assessments, public involvement, and selected action and decision for the Vehicle Storage Area, site SS09.

5.1.1 Relevant Site History

Vehicle Storage Area (SS09) consists of a gravel pad that was historically used for vehicle storage. The site is approximately 100 yards southeast of the module train in the vicinity of the new Short Range Radar (SRR) system (Figure 5-1). New construction on, and adjacent to, the site includes the SRR tower, a technical services building, and two satellite ground terminals. A gravel pad was added to the original Vehicle Storage Area and adjacent road during construction of the SRR structures. During the current construction activities, soil boring materials that were considered potentially contaminated were stockpiled north of the Vehicle Storage Area site. The stockpiled soils were sampled as part of the RI at the site.

5.1.2 Sample Analyses Summary

Historic sampling conducted at the Vehicle Storage Area (SS09) detected diesel range organics, gasoline range organics, and xylenes (Radian 1989). Historic samples encompassed five soil samples collected at five locations at the site. A summary of sample analytical results for historic investigations is presented in Table 5-1.

During the 1993 RI, the Air Force collected a total of 13 soil, sediment, and surface water samples. Organic compounds were detected at low concentrations in soil and surface water samples. Inorganic compounds were detected above background concentrations in surface water samples. Very low levels of volatile organic compounds (VOCs) that are common components of diesel fuel were detected in the stockpiled soil area and in an isolated area at the Vehicle Storage Area. Table 5-2 summarizes organic chemicals detected above background levels and inorganics detected that were determined to be of concern based on regulatory action levels. Sample locations and results are shown on Figure 5-2.

A comparison of historical and the 1993 RI data indicates a decrease in the concentration of petroleum compounds and VOCs in soils and surface water at the site. Petroleum hydrocarbon identification methods used during the 1993 RI were in accordance with State of Alaska requirements, which report findings as residual, gasoline, or diesel range petroleum hydrocarbons. The gasoline and diesel range petroleum hydrocarbons analyses are comparable with petroleum hydrocarbon analyses conducted during historic investigations (gasoline and diesel range organics). It is possible that the previously detected levels of diesel range organic compounds were from small isolated areas caused by leaks and/or spills in the vehicles stored at the site.

The source of contamination at the Vehicle Storage Area (SS09), although unknown, is possibly isolated spills or leaks caused by previous vehicle storage activities at the site. The contaminants

detected are isolated to a small area in the southern section of the site and do not appear to be migrating.

5.1.3 Risk Assessment Summary

The Final Wainwright Risk Assessment (U.S. Air Force 1996b) concluded that risks posed to human health and ecological receptors by site contaminants are minimal given current or future site uses (U.S. Air Force 1996b). Potential hazards and risks were identified in surface water from barium, manganese, vanadium, zinc, and 1,2-dichloroethane. The potential hazards and risks are based on a future scenario in which the site surface water would be used as a sole-source drinking water supply and are probably overestimated by at least an order of magnitude.

Based on the RI sampling and analyses, the risk assessment, and current or future site uses, remedial actions are not warranted at the site. No significant human health or ecological risks were identified at the site. Therefore, the Vehicle Storage Area (SS09) is recommended for no further action.

5.2 PUBLIC INVOLVEMENT AND COMMENT

Community relations activities that have taken place for the Wainwright radar installation include the following: residents of Wainwright were interviewed by Air Force community relations personnel on 24 June, 1993; a mailing list of residents of Wainwright is being maintained by the 611th CES/CEVR; a fact sheet describing the status of the Installation Restoration Program at the radar installation was distributed to the mailing list on October 1994; a fact sheet was distributed to the mailing list during August 1995 explaining the Restoration Advisory Board (RAB) and how community residents could become RAB members; two RAB meetings were held in Barrow, Alaska in 1995; public notices were published in February 1996 regarding the decision for no further action at the Vehicle Storage Area (SS09); fact sheets were sent to all residents on the mailing list during early February 1996 describing the sites recommended for no further action at the Wainwright radar installation; a public review and comment period on the Draft Final Decision Document for no further action sites was held from February 9 to March 9, 1996; and documents have been, and will continue to be, available for review at the Alak School in Wainwright, Alaska, Tuzvy Library in Barrow, Alaska, and Elmendorf Air Force Base in Anchorage, Alaska since February 1996. The Air Force has received no public comments in response to the fact sheets, public notices distributed to date, or during the formal public comment period.

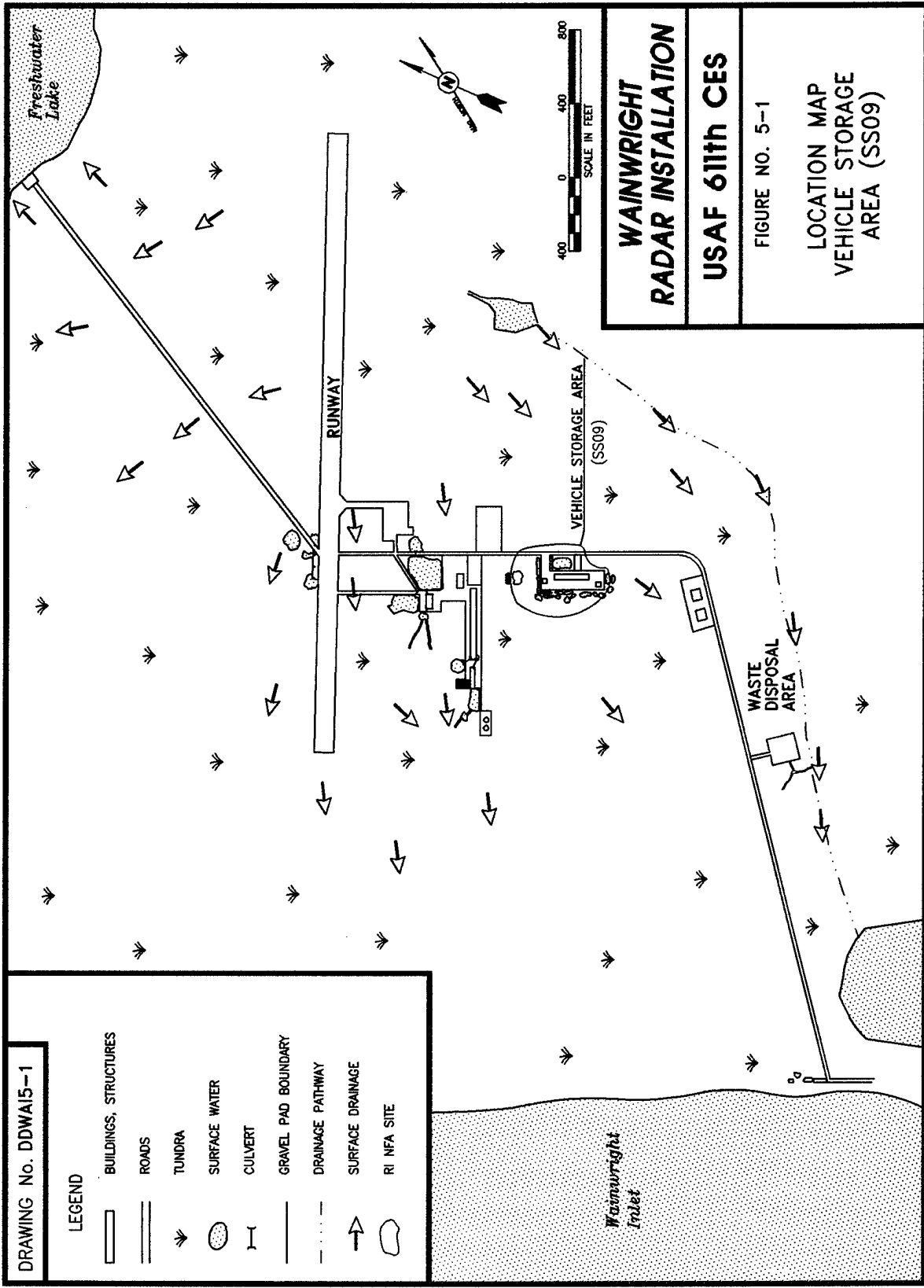
To facilitate public participation the Air Force plans to conduct a RAB informational meeting during 1996.

5.3 SELECTED ACTION AND DECISION

The selected action and decision for the Vehicle Storage Area (SS09) is no further action. This action is consistent with the requirements of ADEC, the Air Force, and federal regulations regarding the remediation of hazardous waste sites. This decision is based on the conclusions

DRAWING No. DDWA15-1

- LEGEND
- BUILDINGS, STRUCTURES
 - ROADS
 - TUNDRA
 - SURFACE WATER
 - CULVERT
 - GRAVEL PAD BOUNDARY
 - DRAINAGE PATHWAY
 - SURFACE DRAINAGE
 - RI NFA SITE



**WAINWRIGHT
RADAR INSTALLATION**

USAF 611th CES

FIGURE NO. 5-1

LOCATION MAP
VEHICLE STORAGE
AREA (SS09)

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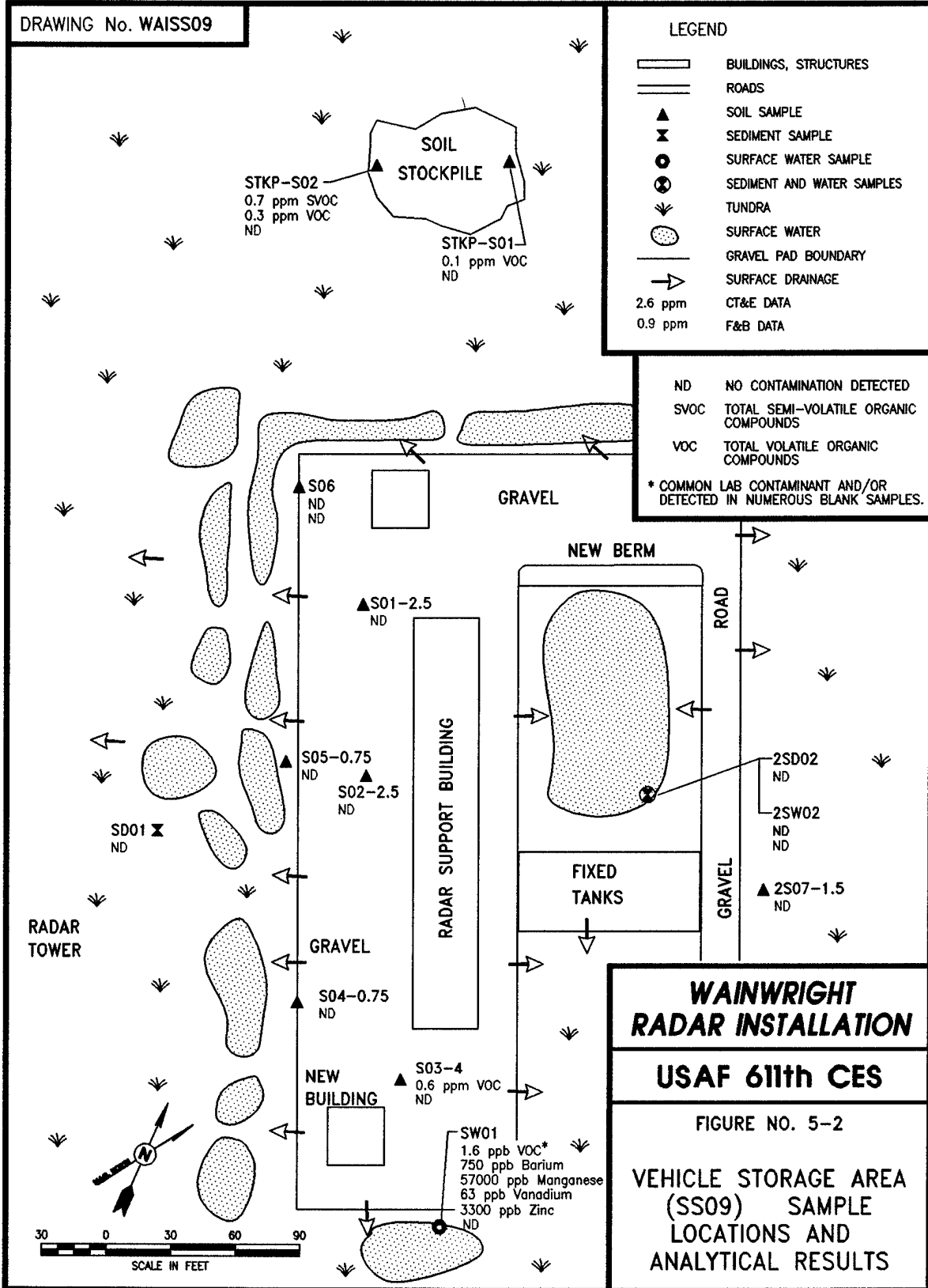
DRAWING No. WAISS09

LEGEND

- BUILDINGS, STRUCTURES
- ROADS
- SOIL SAMPLE
- SEDIMENT SAMPLE
- SURFACE WATER SAMPLE
- SEDIMENT AND WATER SAMPLES
- TUNDRA
- SURFACE WATER
- GRAVEL PAD BOUNDARY
- SURFACE DRAINAGE
- 2.6 ppm CT&E DATA
- 0.9 ppm F&B DATA

ND NO CONTAMINATION DETECTED
 SVOC TOTAL SEMI-VOLATILE ORGANIC COMPOUNDS
 VOC TOTAL VOLATILE ORGANIC COMPOUNDS

* COMMON LAB CONTAMINANT AND/OR DETECTED IN NUMEROUS BLANK SAMPLES.



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TABLE 5-1. SUMMARY OF HISTORIC SAMPLING AT THE VEHICLE STORAGE AREA (SS09)

CHEMICAL	SAMPLE MEDIA	MAXIMUM CONCENTRATION	NUMBER OF DETECTIONS
DRO ^a	Soil	3,810 mg/kg	5
GRO ^b	Soil	10 mg/kg	1
Xylenes	Soil	0.2 mg/kg	1

- ^a DRO = Diesel Range Organics.
^b GRO = Gasoline Range Organics.

TABLE 5-2. SUMMARY OF 1993 REMEDIAL INVESTIGATION SAMPLING AT THE VEHICLE STORAGE AREA (SS09)

CHEMICAL	SAMPLE MEDIA	MAXIMUM CONCENTRATION	NUMBER OF DETECTIONS
Naphthalene	Soil	0.072 mg/kg	2
Benzyl Alcohol	Soil	0.694 mg/kg	1
Tetrachloroethene	Soil	0.330 mg/kg	1
Toluene	Soil	0.172 mg/kg	2
Trichloroethene	Soil	0.062 mg/kg	1
1,2,4-Trimethylbenzene	Soil	0.042 mg/kg	2
Xylenes	Soil	0.125 mg/kg	2
1,2-Dichloroethane	Surface Water	1.6 µg/L	1
Barium	Surface Water	750 µg/L	2
Manganese	Surface Water	3,800 µg/L	2
Vanadium	Surface Water	63 µg/L	1
Zinc	Surface Water	3,300 µg/L	1

provided above, and the supporting documentation contained in the Final Wainwright Remedial Investigation/Feasibility Study (U.S. Air Force 1996a) and the Final Wainwright Risk Assessment (U.S. Air Force 1996b).

5.4 REFERENCES

U.S. Air Force. 1996a. Final Remedial Investigation and Feasibility Study, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

U.S. Air Force. 1996b. Final Risk Assessment, Wainwright Radar Installation, Alaska. Prepared for the USAF Center for Environmental Excellence, Environmental Restoration Division. Prepared by ICF Technology, Inc. May.

Radian Corporation. 1989. Environmental Impact Assessment for LIZ-3 Distant Early Warning Radar Station. Wainwright, Alaska.