

Community Relations Plan



for the
**Installation Restoration Program
and Resource Conservation
& Recovery Act**



**Tinker AFB,
Oklahoma**

March 2004

TABLE OF CONTENTS

INTRODUCTION TO THE COMMUNITY RELATIONS PLAN..... 1

SECTION I..... 2

A. Overview 5

B. Purpose of the Community Relations Plan..... 7

C. RCRA Community Relations Requirements..... 7

D. CERCLA Community Relations Requirements 8

SECTION II 9

A. History of Tinker Air Force Base 10

B. History of Tinker AFB’s Environmental Programs 10

SECTION III..... 14

A. CERCLA/RCRA Sites 21

SECTION IV 39

A. Description of Surrounding Community 40

SECTION V..... 41

A. Level of Interest and Concern 42

SECTION VI..... 46

SECTION VII..... 49

A. Coordinate with Agencies..... 52

B. Tinker AFB Spokesperson 52

C. Community Relations Techniques..... 52

SECTION VIII 58

A. Corrective Action Process 59

B. Techniques and Schedule..... 59

SECTION IX 63

A. Techniques and Schedule 64

FIGURES

1. Greater Oklahoma City Metropolitan Area 3

2. Tinker Air Force Base and Vicinity 4

3. Tinker AFB Installation Restoration Program Sites 15

4. Public involvement Activities in the RCRA Corrective Action Process (During RCRA Permitting) 50

5. CERCLA IRP Timing 55

TABLES

1. Site Summary and Status as of July 2001 16

2. Site Identification No., SWMU No., and GWMU No. 19

3. CERCLA Activities 56

APPENDICES

A. Federal and State Agency Representatives (Points of Contact)..... 69

B. Federal, State and Local Elected Officials 70

C. Citizen Groups 76

D. Media 77

E. Tinker AFB Community Advisory Board (CAB)..... 80

F. Public Meetings..... 83

G. Glossary of Environmental Terms..... 84

H. Glossary of Environmental Acronyms 95

INTRODUCTION

This document outlines the community relations and public participation programs that are part of the overall restoration process at Tinker Air Force Base (AFB), Oklahoma. Figures 1 and 2 show the location of Tinker AFB within the Oklahoma City area. This document reflects the base's community relations goals and updates the previous Community Relations Plan, dated October 2001.

Section II of this plan outlines a brief history concerning the origins of contamination and what restoration activities have been taken to date.

Section III provides capsule descriptions of Tinker AFB restoration sites regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA).

Community background, interest, involvement and goals in restoration activities at Tinker AFB are chronicled in Section IV, V and VI, followed by an outline in Section VII of community relations methods and techniques to address the indicated level of public interest and concern with those issues. Section VIII and IX identifies a schedule for these community relations activities and explains their interaction with various stages of the restoration process under CERCLA and RCRA guidelines. Also included, a timing chart and a table of activities for certain community relations tasks that must be accomplished under CERCLA and RCRA guidelines.

Appendices to this plan include federal and state elected officials, citizen groups, media contact lists, a listing of Tinker AFB Community Advisory Board, formerly Restoration Advisory Board, members, locations where public meetings are held, and a glossary of environmental terms.

Tinker AFB will review this plan as necessary to update restoration status and technical activities, and to revise community relations activities based on the level of community interest and concern.

To ensure this plan is carried out effectively, the following individuals are designated representatives concerning restoration activities at Tinker AFB:

Mr. Joseph Cecrle
Chief, Environmental Restoration Division
Directorate of Environmental Management
OC-ALC/EMPE
7701 Arnold Street, Suite 204
Tinker Air Force Base, OK 73145-9100
(405) 734-3058

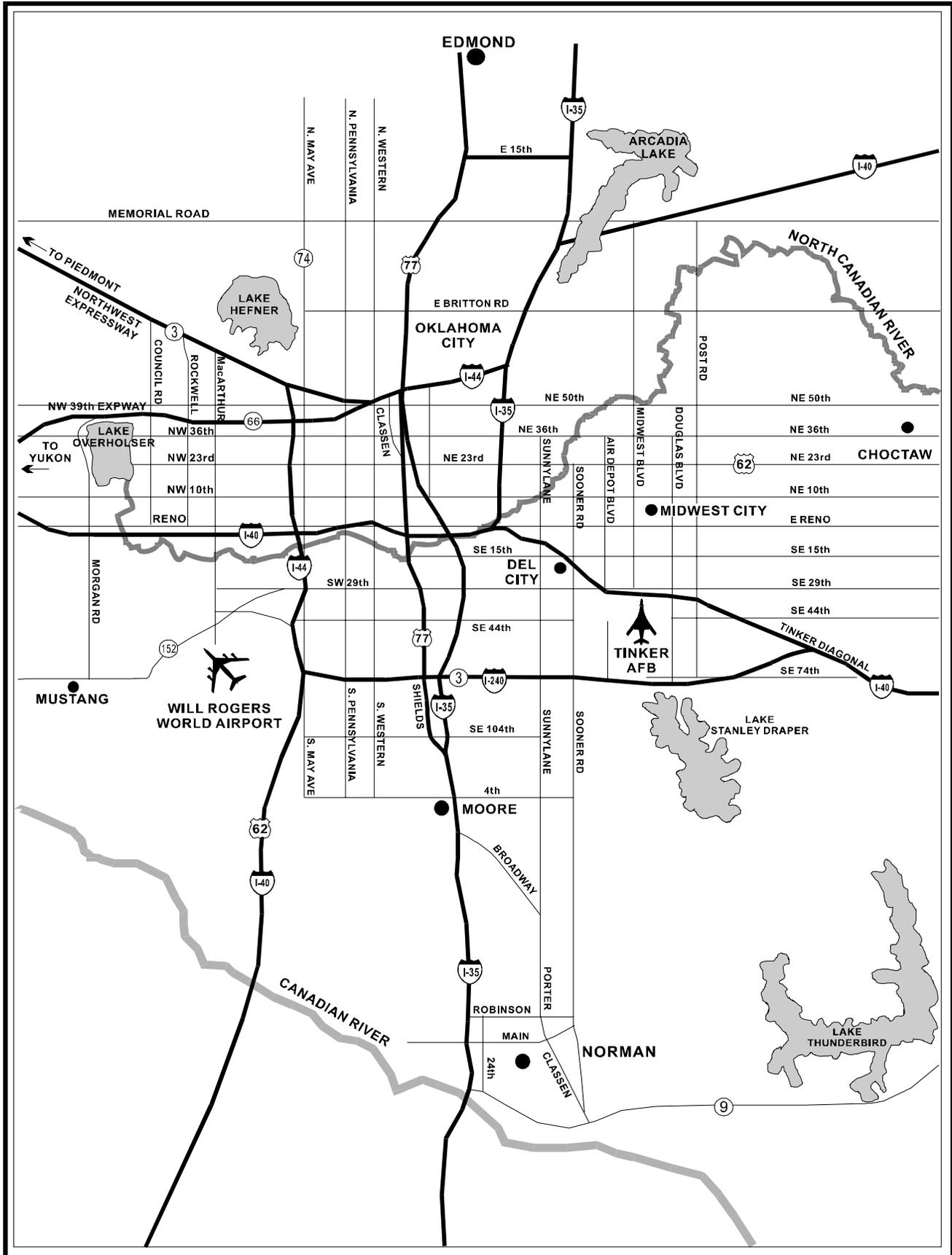
Mr. Hal Cantwell
Oklahoma Dept. Of Environmental Quality
ODEQ/Site Assessment Unit
P.O. Box 1677
707 N. Robinson
Oklahoma City, OK 73101-1677

Mr. Brion Ockenfels
Office of Public Affairs
OC-ALC/PA
3001 Staff Dr., Suite 1AG78A
Tinker Air Force Base, OK 73145-3010
(405) 739-2027
Fax: (405) 739-2882

Mr. Robert Sullivan (6SF-AP)
U.S. EPA Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202
(214) 665-2755
Fax: (214) 665-6660

Section I

Figure 1 Greater Oklahoma City Metropolitan Area



I. OVERVIEW

In 1980, Congress passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to address the cleanup of hazardous waste disposal sites across the country. CERCLA gave the President authority to require responsible parties to remediate the sites or undertake response actions through the use of a fund, known as Superfund. Through executive order, the President delegated responsibility to the Environmental Protection Agency to investigate and remediate private party hazardous waste disposal sites that created a threat to human health and the environment. The President delegated responsibility to investigate and clean up federal facility disposal sites to the various federal agency heads. In 1981, the Secretary of Defense established the Defense Installation Restoration Program (IRP) to investigate and remediate Department of Defense (DoD) sites. In turn, each military service established its own IRP to locate and investigate hazardous waste sites on its installations.

Under the Air Force IRP, Tinker Air Force Base (AFB) began a Phase I study in 1981 similar to a preliminary assessment/site investigation. This study helped to locate 14 sites that needed further investigation. A Phase II study (equivalent to the current Remedial Investigation/Feasibility Study phase) was performed in 1983.

Congress amended CERCLA in 1986 through the Superfund Amendments and Reauthorization Act (SARA). SARA waived sovereign immunity for federal facilities. It gave authority to the EPA to oversee the cleanup of federal facilities and to have the final authority to select the remedial action at federal facilities placed on the National Priorities List (NPL) if the EPA and relevant federal agency could not concur in the selection. Congress also codified the Defense Environmental Response Program (DERP) (SARA Section 211), setting up a fund for the DoD to remediate its sites since the Superfund was not available for the clean up of federal facilities. The DERP specifies the type of cleanup responses that the fund can be used to address.

In response to SARA, the DoD realigned its IRP to follow the investigation and cleanup stages of the EPA. The phases of action and treatment at CERCLA sites are:

Preliminary Assessment/Site Investigation (PA/SI) — determines if contamination is present.

Remedial Investigation/Feasibility Study (RI/FS) — characterization study of the site and determination of alternatives for cleanup.

Record Of Decision (ROD) for selection of a remedial action — selection of the best cleanup alternative.

Remedial Design/Remedial Action — engineering design plan and implementation of cleanup plan.

Tinker AFB is an active military industrial facility responsible for the program depot maintenance of a wide variety of military aircraft. In order to store hazardous wastes for more than 90 days at the facility, the base, in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA), filed a Part B permit application for interim status as a storage facility. In 1984, Congress reauthorized RCRA and amended the statute to allow the EPA to require, as a permit condition, a facility to take corrective action for any releases of hazardous waste or constituents from any solid waste management unit (SWMU) at a treatment, storage or disposal (TSD) facility. These SWMUs do not have to be active units currently being used for treatment, storage or disposal and can also be identified as sites requiring CERCLA response actions.

On July 1, 1991, EPA Region VI and the Oklahoma Department of Environmental Quality (ODEQ) issued a RCRA Part B Permit, whereby Tinker AFB was formally granted the right to operate as a hazardous waste storage facility for 10 years. This included the right to store controlled industrial wastes in accordance with the conditions of the permit, as well as federal and state regulations, including the Oklahoma Controlled Industrial Waste Disposal Act of 1981, and the Solid Waste Disposal Act of 1976 (as amended by RCRA and the Hazardous and Solid Waste Amendments of 1984 — HSWA). In January of 2001, Tinker AFB submitted a RCRA Part B Permit renewal application to the ODEQ, which was approved on August 15, 2002.

The current RCRA Part B Permit (No. OK1571724391) for Tinker AFB contains 29 SWMUs. Tinker has identified one additional area requiring investigation. Twenty-five of these SWMUs are also identified as IRP sites (See Section III Table 2). The current RCRA permit requires Tinker to investigate all identified SWMUs and to take further action where appropriate. RCRA Facility Investigations (RFIs) are being performed in order to meet permit requirements. It is the intent of each RFI and any subsequent corrective measure study and/or corrective action to meet both CERCLA response action and RCRA corrective action requirements.

CERCLA and RCRA share similar objectives in keeping the community informed about, and involved in, hazardous waste issues. Community relations activities are tailored to each individual site, taking into consideration the level of community concern, progress of cleanup and corrective actions, and RCRA permitting status.

Public information and participation programs are an integral component of CERCLA restoration and RCRA hazardous waste corrective action plans, study and implementation processes. CERCLA and RCRA community relations programs ensure that people who live and/or work in the communities surrounding facilities where corrective actions are being conducted, as well as those who work in or for these facilities, have opportunities for public participation in the environmental restoration process. The

blueprint for public information and participation is the Community Relations Plan (CRP). This important document identifies the public's concerns and suggests ways that those responsible for implementing the environmental restoration will respond to those concerns. It also documents how and when community relations activities, required by CERCLA and RCRA, are carried out.

A. Purpose of the Community Relations Plan

The purpose of this CRP is to inform, openly and effectively, concerned citizens of the ways in which they can participate in the process of restoring the environment at Tinker AFB. This CRP is designed as a planned approach to establishing and maintaining two-way communication between the Base and its surrounding community during these lengthy and complex technical processes. An interactive communication system enables the community and those implementing the Installation Restoration Program at Tinker AFB to convey information to each other, provide responses to questions and concerns, and formulate more responsive actions. Thus, community relations activities benefit both local citizens and the Base by providing all parties with insight and first-hand information on continuous IRP efforts. The CRP outlines a dynamic program integrated into all stages of CERCLA and RCRA corrective action investigation, planning, and implementation phases which are responsive to technical developments and changing concerns of the public. It maps out a recommended course of action that Tinker AFB environmental planning staff will implement to facilitate public involvement during the IRP under CERCLA guidance, RFI and corrective action processes. Under RCRA, review of permit applications, issuance of permits and administrative orders, permit modifications, implementation of corrective action programs, and approval of closure plans are all activities that require varying degrees of public involvement.

The initial version of this CRP, which originated from community concerns identified during community interviews, conducted in December 1992 at Tinker AFB, and public meetings held in April 1990, November 1993, and April 1994, revealed a low-to-moderate level of interest in Base environmental issues. Additionally, the plan was constructed with sufficient flexibility to adjust to changes either in community attitudes or in the schedule for technical activities at the site. An updated community profile and a detailed description of community relation's activities are outlined in Sections V-IX.

B. RCRA Community Relations Requirements

Each RCRA-permitted facility is required (1) to notify the Oklahoma Department of Environmental Quality (ODEQ) when it discovers releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at a facility, and (2) to develop a corrective

action plan for its study and restoration. As part of the RCRA permitting process, ODEQ considers the status of all SWMUs at facilities.

C. CERCLA Community Relations Requirements

Community relations requirements are set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), in the Superfund Amendments and Reauthorization Act of 1986 (SARA) and in EPA policy documents. For remedial actions, the plan is generally prepared before the CERCLA remedial investigation/feasibility stage (RI/FS) begins and outlines community relation's activities to be held during the RI/FS. The plan also identifies anticipated activities that are required during the ROD phase and prior to remedial design and remedial action (RD/RA). Additionally, it provides guidance for both current and future actions and investigations that may affect the level of community concern in the local area (see Section III for CERCLA capsule site descriptions).

Section II

II. BACKGROUND

A. History of Tinker Air Force Base

Late in 1940, a group of Oklahoma business leaders learned that the War Department was considering the central United States as a location for an aircraft maintenance and supply depot. The group, known as the Local Industries Foundation, acquired 960 acres of land with an option on an additional 480 acres and offered the property to the War Department. The War Department awarded the aircraft maintenance and supply depot project to Oklahoma City in April 1941. The facility, which began operating in 1942, was later named after Maj. Gen. Clarence L. Tinker, who lost his life during a long-range strike against Japanese forces during the early months of World War II. Tinker AFB's mission is to serve as a worldwide repair depot for aircraft, weapons, and engines. Industrial operations in support of the Base's mission include aircraft maintenance, jet engine rebuilding and overhauling, and aircraft servicing.

The community donated 52 percent of the roughly 5,000 acres that now comprise Tinker AFB. Tinker AFB is one of Oklahoma's largest industries and the state's second largest single employer, with an annual military and civilian payroll in excess of \$737 million. More than 25,000 civilian and military personnel are assigned to the Base. In addition, Tinker AFB is one of the largest major military/industrial installations in the world.

B. History of Tinker AFB's Environmental Programs

In the early 1970s, the Environmental Protection Committee (EPC) was formed to track ongoing environmental concerns at Tinker AFB. Under the guidance and direction of the Oklahoma City Air Logistics Center (OC-ALC), the focus of the EPC is to oversee all environmental activities at the Base. Membership of the EPC includes all major directorates of the OC-ALC, as well as all tenant organizations on Base. In 1995, the EPC and the Air Force Occupational Safety and Health (AFOSH) Council, merged to form the Environmental, Safety, and Occupational Health (ESOH) Council. This concept integrates EPC and AFOSH aspects into a single interrelated forum providing the executive director with ESOH cradle-to-grave mission impact data.

A Technical Review Committee (TRC) was established in 1985 in accordance with Title 10 U.S.C. section 2705(c) to provide direction for the IRP and facilitate communication between the Air Force, EPA Region VI, the Oklahoma Department of Environmental Quality (DEQ), and the general public. The TRC was chaired by the Base's Directorate of Environmental Management and met quarterly. The TRC then evolved into the Restoration Advisory Board (RAB), but the change

represented more than a name change. The RAB allowed for more diverse community representation, procedural changes, and had a community co-chair.

In 1999 the RAB transformed into the Community Advisory Board or CAB, indicating that the CAB would consider protocols other than restoration as agenda items, but the main focus would still be restoration projects.

Tinker initiated its IRP in 1980 with a Preliminary Assessment (PA) of 14 sites. As a result of various base-wide surveys (i.e., underground storage tank and water quality surveys), additional PAs were conducted for suspected sites, increasing to 36 the number of IRP sites. Twenty-three of the Base's IRP sites are being addressed under RCRA guidance. Numerous remedial investigations/feasibility studies (RI/FS), and interim removal actions have been conducted at various sites since the IRP for the Base began (see Section III, Table 1). Designated IRP sites include landfills, fire training pits, radioactive waste disposal sites, fuel storage areas, industrial waste pits, and the Industrial Wastewater Treatment Plant (IWTP). A total of 136 monitoring wells were installed at 11 sites to identify soil and groundwater contamination.

In September 1983, the Base was notified by the Oklahoma State Department of Health that contamination had been detected at an off-base well north of Building 3001, located on land the Air Force had leased during the 1970s for the disposal of solid wastes. One household in the vicinity was subsequently connected to the base water supply. As a result of the state's discovery, a major sampling effort took place within a two-mile radius around the contaminated well. Samples were taken from 34 private and six public wells off base, in addition to 12 Tinker AFB water supply and 30 waste disposal on-site monitoring wells. Reports from the state Department of Health concluded there was no contamination in any off-Base wells, with the exception of one found in Building 3001 (Wells 18 and 19) containing Trichloroethylene (TCE). The contaminated wells were promptly shut down.

Results of these investigations facilitated the July 1987 placement of Building 3001/Soldier Creek on the National Priorities List (NPL). Initially the Building 3001/Soldier Creek NPL site was divided into five operable units (OUs), Building 3001, Soldier Creek, North Tank Area, Pit Q-51, and Wells 18 & 19. In 1991, the Soldier Creek OU was divided into two OUs, Soldier Creek Sediment and Surface Water, and Soldier Creek Groundwater. Placing these OUs on the NPL required them to be remediated in accordance with CERCLA requirements, more commonly known as Superfund law. A Federal Facilities Agreement (FFA) was signed on December 9, 1988, by the Air Force, EPA Region VI, and ODEQ in accordance with the Federal Facility provision of CERCLA. A Record of Decision (ROD) was signed in August 1991 for remediating Building 3001 and its Operable Units. The ROD describes selected cleanup alternative(s) based on comprehensive analysis during the RI/FS with

consideration given to public comments and concerns. The FFA identifies IRP sites covered under NPL guidance and is a legally-binding document describing each agency's roles and responsibilities in managing, implementing and overseeing the facility's long-term remediation.

Since placement on the NPL, Wells 18 and 19 and Pit Q-51 OUs have been shut down, cleaned and sealed. As of February 1994, Building 3001 and Soldier Creek Sediment and Surface Water OUs had reached the RA stage of the IRP, while the North Tank Area remediation was in the RD stage. A ROD for the Soldier Creek Sediment and Surface Water site was signed on August 26, 1993, with continued monitoring and an ecological assessment selected as the most appropriate remedy. On February 15, 1993, construction of the groundwater treatment plant for remediating Building 3001 groundwater was completed. Trial operations were initiated on that day and continued through June 1994. Since June 1994, the plant has been in full operation, pumping groundwater from the 3001 area and removing chromium and volatile organics, then discharging the treated water to the industrial reuse system. A remedial investigation (RI) for the new OU (Soldier Creek Groundwater, OT 05) was initiated in 1993 to address groundwater in the northeast quadrant of the Base (including off-base areas and Soldier Creek).

In June 1989 the EPA completed a RCRA Facility Assessment for Tinker AFB, which identified 105 SWMUs and 19 Areas of Concern (AOC). The purpose of the RFA was to identify and assess the potential for release of hazardous wastes or hazardous constituents from SWMUs and AOCs, as well as to evaluate the need for further investigations under the authority of Section 3004(u) of RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). Based on recommendations presented in the RFA, EPA developed requirements for the RFI pursuant to 40 CFR 264. Of the original 105 SWMUs, 43 SWMUs and 2 AOCs were identified by EPA for further investigation during the RFI.

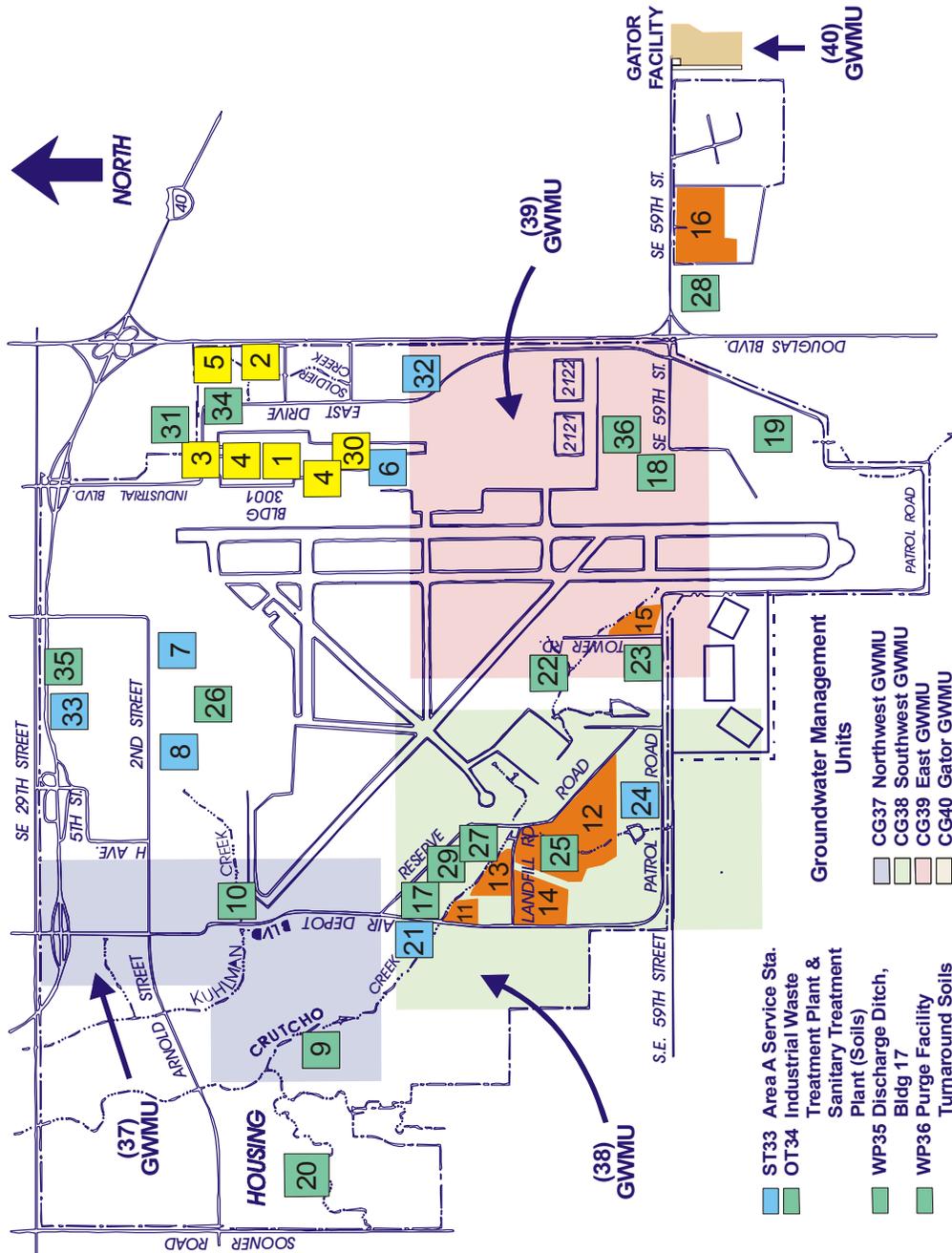
EPA granted Tinker AFB a RCRA Hazardous Waste Management Permit on July 1, 1991, authorizing the Base to operate as a hazardous waste storage facility for a 10-year period. RCRA requires owners/operators of permitted facilities to implement corrective actions to clean up contamination resulting from past and present practices. As of October 1994, the investigation of the original 19 SMWUs had entered Phase II of the RFI to define the nature and extent of contamination. Once the nature and extent of contamination is identified at each SWMU, a Corrective Measures Study (CMS) may be performed. This CRP is a required component of the overall RFI work plan. A summary list of the SWMUs addressed by the RFI work plan and IRP sites is found in Section III, Table 1 and 2.

Of the 40 sites in the IRP closed, 27 have been closed and removed from the Part B permit as part of an aggressive restoration program at Tinker AFB. The IRP execution strategy is to protect human health and the environment, satisfy legal agreements and have all sites closed or remedies in place by the end of FY 2008.

SECTION III

Figure 3

TINKER AFB RESTORATION SITES



(NOT TO SCALE)

LEGEND OF SITES	
Color Code	
	National Priorities List Site (Operable Units)
	Fuel Sites
	Landfills
	Miscellaneous

- OT01 Bldg 3001 Groundwater
- OT02 Soldier Creek Sediments & Surface Water
- ST03 North Tank Area
- OT04 Wells 18 & 19
- OT05 Industrial Waste Treatment Plant - Groundwater
- ST06 Southwest Tank Area
- ST07 290 Fuel Farm
- ST08 Four Fuel Sites
- OT09 Crutcho Creek
- OT10 Kuhlman & Elm Creeks
- LF11 Landfill 1
- LF12 Landfill 2
- LF13 Landfill 3
- LF14 Landfill 4
- LF15 Landfill 5
- LF16 Landfill 6
- WP17 Supernatant Pond
- WP18 Industrial Waste Pit #1
- WP19 Industrial Waste Pit #2
- OT20 Multiple Creeks
- FT21 Fire Training Area #1
- FT22 Fire Training Area #2
- OT23 Facility 1123
- FT24 Fire Training Area #4
- RW25 Radioactive Waste
- Disposal Site 1030West
- RW26 Radioactive Waste
- Disposal Site 201 South
- RW27 Radioactive Waste
- Disposal Site 62598
- RW28 Radioactive Waste
- Disposal Site 4000
- RW29 Radioactive Waste
- Disposal Site 1022 East
- WP30 Pit Q-51
- OT31 Bonnewell
- ST32 3700 Fuel Yard

- ST33 Area A Service Sta.
- OT34 Industrial Waste Treatment Plant & Sanitary Treatment Plant (Soils)
- WP35 Discharge Ditch, Bldg 17
- WP36 Purge Facility Turnaround Soils

- Groundwater Management Units**
- CG37 Northwest GWMU
 - CG38 Southwest GWMU
 - CG39 East GWMU
 - CG40 Gator GWMU

Table 1 Site Summary and Status As Of January 2003

IRP Site Code	SWMU No.	Description	Materials Disposed Of And/Or Contamination At Site	Dates Of Operation	IRP Or Non-IRP Phase	Regulatory Mechanism
OT 001		Building 3001 - Groundwater	TCE, PCE, chromium and other metals	N/A	RA-O	FFA-CERCLA
OT 002		Soldier Creek - Sediments and Surface Water	contaminated spills, runoff, waste waters	N/A	LTM	FFA-CERCLA
ST 003		North Tank Area	fuel oil, waste solvent, gasoline	1943-1984	RA-O	FFA-CERCLA
OT 004		Wells 18 & 19 (2 sites; 1 operable unit)	TCE and PCE	1942-1986	Closed NFRAP IV	FFA-CERCLA
OT 005 ++		Soldier Creek/ Off-base Groundwater ¹	industrial waste, chemical waste	1943-present	ROD/DD	FFA-CERCLA
ST 006		Southwest Tank Area	fuel and solvents	1945-1980	RA-O	IRP
ST 007		290 Fuel Farm	fuel and solvents	1942-1986	RA-O	IRP
ST 008	15 - 18	Four Fuel Sites	fuel and solvents	1942-1980	RI	RCRA
OT 009		Crutcho Creek	occasional spills, landfill seeps	N/A	LTM	IRP
OT 010		Kuhlman Creek	occasional spills, landfill seeps	N/A	LTM	IRP
LF 011		Landfill 1	general household refuse	1942-1945	LTM	RCRA
LF 012		Landfill 2	general refuse, industrial waste, radiological waste	1945-1952	LTM	RCRA
LF 013		Landfill 3	general refuse, industrial waste	1952-1961	LTM	RCRA
LF 014	6	Landfill 4	general refuse, industrial waste, radiological waste	1961-1968	LTM	RCRA
LF 015	2	Landfill 5	general refuse, industrial waste	1968-1970	LTM	RCRA
LF 016	1	Landfill 6	general refuse, industrial waste	1970-1979	LTM	RCRA
WP 017	11	Supernatant Pond	sewage disposal, liquid waste	1954-1984	LTM/Pending NFRAP	RCRA
WP 018	12	Industrial Waste Pit #1	oils, cyanide, chromates, phenols, solvents	1947-1958	ROD/DD	RCRA
WP 019	13	Industrial Waste Pit #2	waste oils, solvents	1958-1965	LTM/NFRAP	RCRA

IRP Site Code	SWMU No.	Description	Materials Disposed Of And/Or Contamination At Site	Dates Of Operation	IRP Or Non-IRP Phase	Regulatory Mechanism
OT 020		Multiple Creeks <i>(Deleted as Active Site)</i>	N/A	N/A	NFRAP I	N/A
FT 021	7	Fire Training Area #1	fuel burned and extinguished	1951-1962	NFRAP IV	RCRA
FT 022	8	Fire Training Area #2	fuel burned and extinguished	1962-1966	NFRAP IV	RCRA
OT 023		Facility 1123	temporary storage for new hazardous materials drums	Pre-1985-1990	NFRAP II	IRP
FT 024		Fire Training Area #4	<i>this site never existed; no contamination present</i>	N/A	NFRAP I	IRP
RW 025	19	Radioactive Waste Disposal Site, 1030W	low-level radioactive refuse, mixed waste	1940s-1950s	NFRAP III	RCRA
RW 026	20	Radioactive Waste Disposal Site, 201S	low-level radioactive radium paint solids	1950s-1960s	NFRAP III	RCRA
RW 027	21	Radioactive Waste Disposal Site, 62598	radioactive "lead still" (not located)	1955	NFRAP IV	RCRA
RW 028		Radioactive Waste Disposal Site, 4000	engine parts containing magnesium thorium (site non-existent)	1966	NFRAP I	IRP
RW 029	22	Radioactive Waste Disposal Site, 1022E	two thorium objects, and one radium compass	Mid-1950s	NFRAP IV	RCRA
WP 030 +		Pit Q-51	industrial solvents	1940-1970	Closed NFRAP IV	FFA-CERCLA
OT 031		Bonnewell <i>(Deleted as Active Site)</i>	N/A	N/A	NFRAP I	N/A
ST 032		3700 Fuel Yard	fuel	1954-1991	NFRAP IV	OK UST Program
ST 033		Area "A" Service Station	fuel	1942-1990	RA-O	OK UST Program
OT 034	23	Waste Tanks, Soils	industrial waste & chemical waste	1943 - present	FS	RCRA
	24	IWTP and associated components, Soils ²	treatment of industrial wastewater from processes	1963 - Present	FS	RCRA
	32	Sewage Treatment Plant, Soils ³	treatment of industrial and sanitary wastes prior to 1971; limited sanitary wastes at present	1942 - Present	FS	RCRA
WP 035	54	Discharge Ditch, Building 17 - soils	storage drums containing unused	1950s - Late 1980s	NFRAP III	RCRA

IRP Site Code	SWMU No.	Description	Materials Disposed Of And/Or Contamination At Site	Dates Of Operation	IRP Or Non-IRP Phase	Regulatory Mechanism
WP 036		Purge Facility/ Turnaround Soils	Jet fuel, spills due to transfer operations, possible accidental leaks, leaking tanks and transfer lines	1975 - Present	NFRAP III	IRP
CG 037		Northwest GWMU	Solvents, Fuels	N/A	FS	ODEQ
CG 038		Southwest GWMU	Solvents, Fuels	N/A	FS	ODEQ
CG 039		East GWMU	Solvents, Fuels	N/A	RI	ODEQ
CB 040		Gator GWMU	Solvents, Fuels	N/A	RI	ODEQ

<p>Notes</p> <p>¹ CERCLA will be used as the primary regulatory mandate. Individual components of the IWTP may also be under RCRA compliance standards as determined by EPA.</p> <p>² The IWTP (SWMU 24) has 13 associated components that are listed as individual RCRA SWMU soils.</p> <p>³ The STP (SWMU 32) has 7 sub-components listed as individual RCRA SWMU soils.</p> <p>Symbols</p> <p>+ Operable units under Bldg. 3001 NPL.</p> <p>++ Operable units under Soldier Creek NPL</p> <p>IRP Site Codes</p> <p>OT = Other LF = Landfill</p> <p>WP = Waste Pit ST = Storage Tanks</p> <p>FT = Fire Training Area RW = Radioactive Waste</p>	<p>Abbreviations</p> <p>N/A = Not Applicable</p> <p>LTM = Long Term Monitoring</p> <p>IRA = Interim Remedial Action - will not likely serve as final remedial action once reviewed.</p> <p>OK UST Program = Oklahoma Underground Storage Tank Program</p> <p>NFRAP = No further response action planned, including long term monitoring</p> <p>IRP and Non-IRP Status</p> <p>PA = Preliminary Assessment</p> <p>RI = Remedial Investigation</p> <p>RD = Remedial Design</p> <p>FS = Feasibility Study</p> <p>RFI = RCRA Facility Investigation</p> <p>CMI = Corrective Measures Implementation</p> <p>ROD = Record of Decision</p> <p>RA = Remedial Action</p> <p>Closed = Designation for IRP sites that have state and federal regulator approval for no further action</p> <p>Finished = Designation for IRP sites that have been remediated or have been determined to have contamination below action levels but do not have state and federal approval for no further action</p>
--	---

Table 2 Site Id No., SWMU No., & GWMU No.

SITE ID	SWMU NO.	GWMU NO.
OT001		
OT002		
ST003		
OT004		
OT005		
ST006		
ST007		
ST008	SWMU-15	GWMU-1
ST008	SWMU-16	GWMU-1
ST008	SWMU-17	GWMU-1
ST008	SWMU-18	GWMU-1
OT009		
OT010		
LF011	SWMU-03	GWMU-2
LF012	SWMU-04	GWMU-2
LF013	SWMU-05	GWMU-2
LF014	SWMU-06	GWMU-2
LF015	SWMU-02	GWMU-3
LF016	SWMU-01	GWMU-5
WP017	SWMU-11	GWMU-2
WP018	SWMU-12	GWMU-4
WP019	SWMU-13	GWMU-4
OT020		
FT021	SWMU-07	GWMU-2
FT022	SWMU-08	GWMU-2
OT023		
FT024		
RW025	SWMU-19	GWMU-2
RW026	SWMU-20	GWMU-1
RW027	SWMU-21	GWMU-2
RW028		
RW029	SWMU-22	GWMU-2
WP030		

SITE ID	SWMU NO.	GWMU NO.
OT031		
ST032		
ST033		
OT034	SWMU-24	
OT034	SWMU-32	
WP035	SWMU-54	GWMU-1
WP036		
CG037		
CG038		
CG039		
CG040		GWMU-5

III. SITE DESCRIPTIONS

Several of the listed sites have shown both chlorinated solvent and fuel contamination (Table 1, page 14). In some cases only the major contaminant type is discussed. However, each contaminant type found at every site is being investigated. As part of the process, all monitoring wells on base are sampled annually, and some wells are sampled more than once a year. The data is continually evaluated and used in the decision making process.

Site #OT001 Building 3001

The Building 3001 Installation Restoration Program (IRP) Site (OT001), comprised of a mile-long industrial complex and its surrounding areas, is listed as an operable unit of the B3001/Soldier Creek National Priorities List (NPL) site. From the 1940s through the 1970s, subsurface concrete lined pits and trenches were used to remove solvents and wastewater byproducts of industrial processes from the building interior. These pits and trenches leaked, allowing the solvents to percolate into the soil. The migrating contaminants have reached the upper and lower saturated zones of the Garber-Wellington aquifer. Underground contaminant plumes extend to a maximum depth of 175 feet and laterally across an area of about 220 acres. The primary contaminants at the site are trichloroethylene (TCE), chromium, benzene, tetrachloroethene, lead and nickel. A Record of Decision (ROD) was signed on August 15, 1990.

A pump-and-treat method to clean up the groundwater contamination was included in the ROD and operation of a long-term groundwater extraction and treatment system began on June 1, 1994. The system uses extraction wells to pull up contaminated water that is then directed to a treatment plant constructed specifically for this cleanup action. The extraction system employs 28 vertical extraction wells located to the east and west of Building 3001, and 5 horizontal extraction wells that extend under the building. The plant, designed to process 216,000 gallons per day, uses an air stripper to separate the volatile organic compounds from the water. A secondary treatment process removes chromium through a precipitation/ filtration procedure. Water leaving the plant is purified to drinking water standards, and is then recirculated back to 3001 for reuse in industrial processes. The current remedial action phase is long-term remedial operation (RA-O). The estimated completion date for pump and treat is September 30, 2023. Site closure is anticipated on September 30, 2028, five years after a long-term monitoring of building 3001 extraction system and operations review, in addition, an ESD has been approved by ODEQ and EPA for temporary system shutdown of the building 3001 extraction system. Data will be acquired during this time to support MNA as an alternative remedial method. The relative risk assessment is not required (NR).

Site #OT002 Soldier Creek Sediment and Surface Water

Soldier Creek flows northward from its headwaters at Southeast 59th Street approximately 6 miles down stream to its confluence with Crutch Creek. Two tributaries of Soldier Creek originate on the northeast quadrant of Tinker AFB. West Soldier Creek originates on the west side of Building 3001 and flows northward to its confluence with main Soldier Creek approximately 2 miles downstream. East Soldier Creek flows northward from its origin north of Building 3705, east of Building 3001, and passes the Industrial Wastewater Treatment Plant (IWTP) before reaching its confluence with main Soldier Creek approximately 1 mile downstream. This site is also included as an operable unit of the B3001/Soldier Creek NPL site.

In early 1986, 7500 cubic yards of contaminated sediment was removed from the site during an interim remedial action. The sediment was disposed of at an approved facility. Extensive field investigations were conducted in 1990 and 1991. A remedial investigation (RI) report was finalized in February of 1993. Following a public meeting and a 60-day public comment period, a Record of Decision (ROD) was prepared for the site. The ROD identified long-term monitoring and an ecological assessment as the preferred alternative action for the creek. The ROD also answered questions voiced by the community at the public meeting and received during the public comment period. The ROD was signed by the Air Force on August 24, 1993, and by the EPA on September 14, 1993. A work plan was developed and implemented to perform long-term monitoring and an ecological assessment of Soldier Creek. In 1998 further sediment excavation was done to remove contaminants from the west branch of the creek and in 1999 from the east branch, thus reducing the necessity for costly long-term monitoring. The current remedial action phase is long-term monitoring. The expected closure date is September 30, 2004. The relative risk assessment is not required (NR).

Site #ST003 North Tank Area

The North Tank Area is situated at the northwest corner of Building 3001. This site is included as part of the Building 3001 Operable Unit of the B3001/Soldier Creek NOL site. The site originally housed 5 underground storage tanks (USTs) constructed or installed between 1943 and 1958. All the tanks have been either removed or cleaned and abandoned in place. Primary contamination appears to be located adjacent to the abandoned 235,000 gallon #2 heating oil tank. The Record of Decision reached on August 15, 1990 for the B3001 NPL site includes the North Tank Area. Forty-eight (48) groundwater monitoring/recovery wells and 15 vapor wells were installed to monitor and recover free floating oil product and to conduct two vapor extraction air-permeability tests. Sixty-one (61) soil

samples were analyzed to determine the area and extent of contamination. Cleanup operations began on May 1, 1991. Long-term operation of contaminant removal was implemented. The containment and recovery of free-floating oil product continues to be the current action. This action is expected to be completed by March 1, 2007 and long-term monitoring is anticipated to continue until September 30, 2028. Site closure is projected by September 30, 2028. The assessment of risk to human health and safety at this time is not required (NR).

Site #OT004 Wells 18 and 19

Water supply Wells 18 and 19, both located in Building 3001, were removed from service in 1984 after trichloroethylene (TCE) and perchloroethylene (PCE) were detected in water samples drawn at the wellhead. Investigation of these wells in 1984 concluded that contaminants probably were migrating downward from the shallow saturated zones in the annular space between well casing and the formation, and were entering wells through corrosion holes in casing at depths around 100 and 150 feet. Both wells were plugged in September of 1986. The wells are identified in the Federal Facilities Agreement (FFA) as operable units of the B3001/Soldier Creek NPL site but are not included in the B3001 ROD because remediation was complete before the ROD was signed in 1990. A 'no further response action planned' (NFRAP IV) agreement was reached in February 1990, and the site was closed on June 1, 1991. The assessment of risk to human health and safety at this time is not required (NR).

Site # OT005 Soldier Creek/ Off-Base Groundwater

The Soldier Creek/ Off-Base Groundwater (SCGW) Operable Unit of the B3001/Soldier Creek NPL site encompasses approximately 960 acres of land that drains into Soldier Creek and its tributaries. The eastern-most runway areas, the Building 3001 complex, the Industrial Waste Water Treatment Plant (IWTP) and the Sanitary Treatment Plant (STP) contribute run-off to the creeks. The unit is defined as an area bounded to the east by a line approximately 1500 feet east of Douglas Boulevard, to the north by the confluence of West Soldier Creek and the main branch of Soldier Creek, to the south by Southeast 44th Street, and to the west by the north-south runway. A significant portion of this area is located north and east of Tinker AFB in a combined industrial/residential area. The feasibility study, completed in August 2000, evaluates the type of remedial actions to propose in the ROD for this site. The ROD should be completed by May 31, 2004 and construction of the accepted cleanup remedy (groundwater extraction wells have been proposed) is scheduled to start in May 2004. Cleanup operations are expected to continue until September 30, 2023, with site closure projected for September 2028 after five years of long-term monitoring and operations review. The relative risk assessment is high.

Site # ST006 Southwest Tank Area

The Southwest Tank Site, encompassing an area of about 2.5 acres, is located in the northeast quadrant of Tinker AFB, southwest of Building 3001. The site was in operation from 1945 to 1980 and consisted of 17 underground storage tanks (USTs). The tanks reportedly stored lubricating oils, fuel and solvents. All of the tanks have either been removed or cleaned and abandoned in place. Previous investigations of the soils surrounding the tanks showed the presence of total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylene (BTEX) compounds. An investigation was conducted in 1993 to determine the condition of the USTs and to characterize the soils contamination pathway. The information gained during this investigation, supplemented by subsequent investigations, allowed definition of the vertical and horizontal extent of soils contamination at the site. Completion of the Decision Document (DD) is programmed for May 31, 2007. A vacuum-enhanced pumping (VEP) system; installed at the site to remove fuel product from the groundwater and to enhance biodegradation of fuel components in the soils, began operation in 1997. Operation of this system, along with long-term monitoring (RA-O), is expected to continue until March 1, 2007. Site closure is anticipated for 2007. The relative risk assessment is not required (NR).

Site #ST007 290 Fuel Farm

The 290 Fuel Farm is located on the northern portion of the Base adjacent to Building 290. The original Fuel Farm consisted of five (5) 18,000-gallon USTs and twenty (20) 25,000-gallon USTs. The tanks were used to store motor fuel, aviation gasoline and JP-4. Two (2) major spills of 6,000 and 10,000 gallons respectively occurred in 1979 and 1980. In 1988 the USTs were drained, cut in half and filled with sand. They were then replaced with above ground storage tanks. Investigations conducted in 1985, 1987 and 1988 found fuel-related contaminants in the soils and groundwater. An intensive Remedial Investigation (RI) was conducted at the site in 1994 to determine the amount of fuel remaining in the soils and the full extent of groundwater contamination. The relative risk assessment at that time was high. A Decision Document (DD) was completed and approved on June 21, 2002. Construction on the Phase I remedial action, a vacuum enhanced recovery system was completed in June 2001. The cleanup is scheduled to be completed in 2013 with the closeout targeted for 2018

Site #ST008 Four Fuel Sites

This site originally consisted of 4 underground storage tanks located near Buildings 201 and 214 on the north side of the Base. Using soil borings and groundwater monitoring wells, an investigation took place in 1985 to determine if contamination was originating from the site. In 1991 investigations

were conducted to pinpoint the exact location of the USTs. An RFI Phase II investigation was completed in September 1994 that determined the nature and extent of the contamination in the surrounding soils. In 1995 and 1996, two of the underground tanks were pulled out of the ground. The relative risk assessment is high. Completion of the Decision Document (DD) is scheduled for June 2004. The proposed remediation is Monitor Natural Attenuation (MNA). The projected site closure date is December 1, 2019. A No Further Response Action Planned (NFRAP) document was approved for the soils at the Solid Waste Management Unit (SWMU) 18 that is adjacent to Building 214. This area is a part of the groundwater remediation system installed around Building 214.

Site #OT009 Crutch Creek/Site #OT010 Kuhlman Creek

Crutch Creek originates south of Tinker AFB and flows northward through the Base toward the North Canadian River. The creek receives drainage from the western and southern sections of the Base, including the main instrument runway. Kuhlman Creek, a tributary of Crutch Creek, originates in the northern portion of the Base and is fed by storm sewer outfalls that drain the northern portion of the Base. Crutch and Kuhlman Creeks were identified as potential contaminated sites along with the Soldier Creek Site in 1984. Contamination from landfill seeps (Landfills 1, 3 & 5), occasional spills originating from limited industrial operations located on the western portion of Tinker AFB, and water from the outfalls may have contributed to contamination of these creeks. Extensive sampling of the sediment and surface water of the creek systems was conducted during the RI completed in September 1992. Sampling data from the RI was used to conduct a risk assessment (RA) based on EPA guidelines. The RA determined that the Crutch and Kuhlman Creeks' sediment and surface water did not pose an unacceptable risk. A Decision Document (DD) has been completed and long-term monitoring will continue until October 1, 2008, including both creeks. This site is contained within the boundary of the groundwater contamination study areas known as Contaminated Groundwater (CG037, CG038 and CG039 (also includes Elm Creek)). The relative risk assessment is not required (NR).

Site #LF011 Landfill 1

Landfill 1 is located east of Patrol Road and south of Crutch Creek and covers an area of 1.5 acres. During its operation from 1942 through 1945, the landfill received general refuse and industrial wastes generated at Tinker AFB. Trench water sampling and soil borings revealed low concentrations of volatile and semi-volatile organics along with low levels of metals. The RI performed for Crutch Creek did not reveal any indication that contamination had migrated into the creek. Land use in the vicinity of the site does not include any ecologically sensitive areas, housing or military quarters. The landfill received a RCRA cap in 1991 utilizing a 40-mil membrane and 2 soil layers to minimize the possibility

of leachate migration into Crutch Creek and to prevent any direct contact with the site. The Decision Document (DD) was completed July 25, 2001. The relative risk assessment is not required (NR) and the baseline risk is low. The site is contained within the boundary of the CG038 groundwater contamination study area. Groundwater around the site will continue to be monitored as part of CG038.

Site #LF012 Landfill 2

Landfill 2 covers 27.5 acres and is located south of Landfill Road and adjacent to Landfill 4 on the southwest side of the Base. During its operation from 1945 through 1952, it primarily received general refuse from the Base, including sanitary and industrial wastes. Trench water sampling showed low concentrations of volatile and semi-volatile organics to include trichloroethylene (TCE) and vinyl chloride. Low levels of metals such as barium, cadmium, chromium, lead and nickel were also detected. The possibility of leachate migrating into Crutch Creek from the landfill exists; however, samples collected in the creek do not indicate that this is occurring. The landfill received a RCRA cap in 1998 utilizing a 40-mil membrane liner with 2 feet of clay covering the membrane. The Decision Document (DD) was completed on July 25, 2001. Remediation will be complete with the acceptance of the DD, but long-term monitoring of the site will continue until December 1, 2023, at which time the site is scheduled to be closed. The relative risk assessment is not required (NR) and the baseline risk is low. The site is contained within the boundary of the CG038 groundwater contamination study area.

Site #LF013 Landfill 3

Landfill 3 covers 8.0 acres and sits north of Vanaman Road and south of Crutch Creek in the southwestern portion of the Base. It was in operation from 1952 through 1961 and was used primarily for disposal of general refuse, but included some industrial waste as well. Trench water sampling revealed low concentrations of volatile and semi-volatile organics, including TCE, methyl ethyl ketone and toluene. Metals in the trench water samples included barium, chromium, cadmium, lead, mercury and zinc. Soil borings taken from 3 to 18 feet showed high concentrations of volatile organic compounds (VOCs), particularly at sludge pit located in the south central portion of the landfill. The landfill received a RCRA cap in 1991 using a 40-mil membrane and 2 feet of clay to prevent any direct contact, minimize infiltration and reduce the possibility of leachate migrating into Crutch Creek. The Decision Document (DD) was completed on July 11, 2001 and has gained regulatory approval. The relative risk assessment is not required (NR) and the baseline risk is low. The site is currently scheduled to close on December 1, 2023. The site is contained within the boundary of the CG038 groundwater contamination study area and groundwater will continue to be evaluated and monitored as part of that site.

Site #LF014 Landfill 4

Located immediately west of Landfill 2 and south of Landfill Road, Landfill 4 covers 12.4 acres and operated from 1962 through 1968. Refuse placed in the landfill consisted mostly of general refuse with some drums containing solidified solvent and metal shavings. Trench water sampling showed low concentrations of volatile and semi-volatile organics including TCE, methyl ethyl ketone and toluene. Metals in the trench water contained chromium and manganese. Soil borings taken from 5 to 18 feet revealed acetone, methyl ethyl ketone and chromium. The possibility of leachate migrating into Crutcho Creek exists. However, the Remedial Investigation (RI) performed for Crutcho Creek did not show any indication that this is occurring. The landfill received a RCRA cap in 1997 utilizing a 40-mil membrane liner with 2 feet of clay covering the membrane. The Decision Document (DD) was completed on October 29, 2001 and has gained regulatory acceptance. The relative risk assessment is not required (NR) and the baseline risk is low. The site is currently scheduled to close on December 1, 2023. The site is contained within the boundary of the CG038 groundwater contamination study area and groundwater around the site will continue to be evaluated and monitored as part of that site.

Site #LF015 Landfill 5

Landfill 5, encompassing about 6.0 acres, is located in the southwest portion of Tinker AFB. The landfill is bordered by Tower Road on the west, Patrol Road to the south and Crutcho Creek to the north and east. While it was in operation from 1968 to 1970, the landfill accepted approximately 75,000 cubic yards of general refuse with small quantities of industrial waste. Preliminary sampling indicated the presence of both metals and organic compounds. An interim 18 inch compacted clay cap was installed in August 1990 to minimize infiltration of surface water into the landfill. The landfill received a RCRA cap in 1998 utilizing a 40-mil membrane liner with 2 feet of clay covering the membrane. The Decision Document (DD) was completed on October 21, 2001 and has gained regulatory acceptance. The relative risk assessment is not required (NR) and the baseline risk is low. The site is currently scheduled to close on December 1, 2023. The site is contained within the boundary of the ground water contamination area CG039 and the groundwater will continue to be evaluated and monitored as part of that site.

Site #LF016 Landfill 6

Landfill 6 is situated off of the main Base. It is near the southeast corner of the Base, south of Southeast 59th Street and ½ mile east of Douglas Boulevard on land leased from Oklahoma City. It occupies about 25 acres. During its operation from 1970 to 1979, the landfill was used to dispose of approximately 500,000 cubic yards of general refuse. There are reports that some paints, insecticides,

solvent containers and IWTP sludge were also disposed of at the landfill. After closure in 1979, the trenches were covered with several feet of compacted soils, and then planted with grasses. A compacted clay cap cover system was installed over the landfill in January of 1986 as part of an interim action. Investigations revealed that additional uncapped trenches existed. An extension to the cap cover system was constructed in 1988. During the RI in 1990, solid waste samples of the trenches revealed volatile organic compounds and some metals. The upper saturated zone at the site also was sampled with the majority of contamination (arsenic, barium and cadmium) found in the western portion of the landfill. Groundwater is the primary route of contamination migration at the landfill. A private well sampled north of the site showed some contamination and the residence was subsequently connected to the Tinker AFB water supply. A follow-on sampling effort of several private wells in the area administered by the Oklahoma State Health Department found no evidence of private well contamination. The landfill received a RCRA cap in 2000 utilizing a 40-mil membrane liner with 2 feet of clay covering the membrane. The relative risk assessment is high. The Decision Document (DD) was completed on June 1, 2001 and has gained regulatory approval; however, long-term monitoring of the groundwater is planned to continue until December 1, 2023, at which time the site is scheduled for closure.

Site #WP017 Supernatant Pond

Supernatant Pond is situated on the west side of Tinker AFB east of, and adjacent to, Patrol Road and 200 feet north of Crutch Creek. It is thought that from 1954 through 1970 the site was used as a containment area for sewage effluent from the former Sanitary Waste Treatment Plant. Base personnel continued to use the pond as a disposal site for liquid wastes until 1980. Reportedly, these wastes included petroleum hydrocarbon sludge, solvents and cyanide-contaminated liquids. Soil fill was placed in the pond area when it was abandoned in 1980. Significant settlement occurred and the site would not support growth of vegetation. Subsequently, construction rubble consisting of asphalt, concrete, plastic pipe and other non-hazardous waste was distributed over the area and covered by a layer of soil fill that did maintain grass over the site. The site was remediated in 1992 using solidification/stabilization technology. This technology locks contamination into a cement matrix. Additional sampling performed at the site found no significant contamination. The site is scheduled for closeout on June 1, 2011. The relative risk assessment is not required (NR). However, since the site is contained within the boundary of the CG037 groundwater contamination study area, some long-term monitoring of the groundwater for contamination may continue even after closure.

Site #WP018 Industrial Waste Pit #1

Industrial Waste Pit #1 is located 500 yards southwest of Building 2121, approximately 400 yards west of Douglas Boulevard and northwest of the intersection of Runway Drive and 59th Street. The area of the waste pit is approximately 1.4 acres. The site was an unlined pit in which waste oils, stripping solutions and plating wastes were disposed of from 1947 to 1958. The pit was filled and graded in 1958, leaving no visible surface features to indicate its locations. Because of the soils and vegetative cover over the site, migration of contaminants via air exposure and surface runoff has not occurred. In 1998 and 2002, actions were taken to remove some of the contaminated soil. The 2002 action includes on-site treatment of contaminated soils. Soil migration is at a minimum with little lateral movement. The relative risk assessment is medium. The site is scheduled to close July 15, 2012. The site is contained within the boundary of the CG039 groundwater contamination study area and groundwater around the waste pit will continue to be monitored as part of CG039.

Site #WP019 Industrial Waste Pit #2

Industrial Waste Pit #2 is situated on the southeastern portion of the Base, 320 feet east of the Transient Munitions Facility and 200 yards west of Douglas Boulevard, between Patrol Road and the south end of the North-South runway. Waste oils, cyanides, chromates, phenols, solvents, waste acids and alkali's were mixed with waste petroleum products and often burned to reduce volume during the site's operation from 1958 to 1965. The site was then back-filled and abandoned. A total of nine monitoring wells were installed to assess potential contaminant migration to the groundwater. Based on analytical results from soils and groundwater sampling, no significant contamination has migrated from the site. The relative risk assessment is not required (NR). The Decision Document (DD) was accepted on October 1, 1985 and site remediation completed May 6, 1997. The site was closed on September 19, 2003. A No Further Response Action Planned (NFRAP) was submitted to ODEQ and a request for permit removal was made.

Site #OT020 Multiple Creeks

Multiple Creeks Site was so named because the site consisted of four creeks: Soldier, Crutcho, Kuhlman and Elm Creeks. In 1991 the site was subdivided and investigated as three IRP sites rather than one. The IRP site was closed on of June 1, 1991. The relative risk assessment is not required (NR).

Site #FT021 Fire Training Area #1

Fire Training Area #1, located on the west side of Tinker AFB, is bounded by Crutch Creek to the south, Patrol Road to the east, a 3rd Combat Communications Squadron storage area to the north, and Air Depot Boulevard to the west. In use from 1950 to 1962, the site was unlined and contained a gravel bottom. During Tinker AFB Fire Department training operations, water was first added to the pit to saturate the soils and to reduce infiltration into the soils below. Fuel was then poured on top of the water, ignited for training purposes and then extinguished using water and/or protein-based foam. After each exercise the residual liquids were allowed to soak into the soils. Investigations performed at the site showed that minimal contamination exists. An assessment determined that risks to the most exposed population are less than the maximum risk allowed under EPA guidelines. Thus, the relative risk assessment is not required (NR). A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) for soils was completed on September 30, 1997. A No Further Response Action Planned (NFRAP IV) was written and the site was closed on December 22, 1999. The site is contained within the boundary of the CG037 groundwater contamination study area; groundwater at the site will continue to be evaluated and monitored as part of CG037.

Site #FT022 Fire Training Area #2

This training area is situated northwest of the control tower and north of Crutch Creek in the south-central portion of Tinker AFB. During its operation from 1962 to 1966, the pit was used infrequently. Typically, water was first added to the pit to saturate the soils so that infiltration was reduced. Fuel was then poured on top of the water, ignited and extinguished using water and protein-based foam. Residue was left in the pit to evaporate and infiltrate before the next training exercise. Monitoring well and soil boring sampling investigations determined that no toxicologically significant contamination exists at the site. A Decision Document (DD) was accepted on June 12, 1992 and the response action completed in September 20, 1992. The relative risk assessment is not required (NR). The Fire Training Area #2 site was closed on October 23, 2000. The site is contained within the boundary of the CG039 groundwater contamination study area. The groundwater at the site will continue to be evaluated and monitored as part of CG039.

Site #FT023 Facility 1123

Located on the south side of the Base the facility was used to store incoming materials and hazardous material drums. From 1984 to 1985, the site was covered with a concrete floor that replaced the former dirt floor. Soils samples taken when the concrete floor was installed showed no contamination. Additional soils samples were analyzed in March of 1990 indicating contamination

below EPA guidelines, therefore, a relative risk assessment is not required (NR). A Decision Document (DD) was approved on June 28, 1991, and remediation was considered complete. The site has been designated as finished with a No Further Response Action Planned (NFRAP II) and is considered closed. The site is contained within the boundary of the CG039 groundwater contamination study area.

Site #FT024 Fire Training Area #4

In December 1987, Tinker AFB personnel discovered a drawing which identified an area approximately 300' x 225' in the southwest portion of the Base as a fire training area. It had not been identified during earlier record searches or investigations. This potential site was name FTA 4 and added to the IRP list. An intensive records search followed which consisted of interviewing Base personnel, reviewing Base maps and aerial photographs and on-site reconnaissance. The search revealed that there was no additional evidence of any physical existence, construction or operation of FTA 4. The site was closed on August 25, 1990, and has been designated No Further Response Action Planned (NFRAP I).

Site #RW025 Radiological Waste Disposal Site 1030 West

This site is located within Landfill 2 boundaries, on the south end of Tinker AFB, about 1800 feet northwest of Building 1030 West. IRP Phase I Records Search Report states that the area was used to burn and bury radium dial waste, rags and solvents in the mid-1950s. The waste was routinely placed in a pit and burned, then covered with a layer of soil. A surface survey was performed in 1990 followed by an intrusive survey in 1991. Approximately, 750 cubic yards of soils were removed in June 1992. A second removal action was conducted in 1997. The soils were disposed of at an approved facility. The site is contained beneath the boundaries of the RCRA cap installed at Landfill 2. A Decision Document (DD) with No Further Response Action Planned (NFRAP III) was completed on December 12, 1999. The relative risk assessment is not required (NR). The site is contained within the boundary of the CG038 groundwater contamination study area. The groundwater in this area will continue to be evaluated and monitored under CG038.

Site #RW026 Radiological Waste Disposal Site 201 South

Radioactive Waste Disposal Site 201 South is located south of Building 201 in an area defined by the U-shape of the building footprint. The site was identified during the IRP Phase I Records Search Report. Records report that the site contained radium paint solids and dials from a radium paint room that was located inside Building 201. This room was used in the 1950s. Investigations determined the contamination could be the result of radium paint/solvents spilled on the ground surface. Sampling of the

area was conducted and a soils removal action took place in 1996. A Decision Document (DD) for No Further Response Action Planned (NFRAP III) was accepted on December 22, 1999 and the site was closed on the same date. The relative risk assessment is not required (NR).

Site #RW027 Radiological Waste Disposal Site 62598

Radiological Waste Disposal Site 62598 is situated north of Crutcho Creek, west of Reserve Road, near Landfill 3 on the south end of Tinker AFB. Soils were excavated in July 1991 and no radiological contamination or waste was found. Because nothing was found, the potential risk from soils, water, and air migration pathways was eliminated. The site has been designated as closed with No Further Response Action Planned (NFRAP IV) and long-term monitoring implemented under Phase II of the RFI. The Decision Document (DD) was accepted April 1, 1991 and the site closed on December 22, 1999. The relative risk assessment is not required (NR). The site is contained within the boundary of the CG038 groundwater contamination study area and groundwater will continue to be monitored as part of this area.

Site #RW028 Radiological Waste Disposal Site 4000

Radiological Waste Disposal Site 4000 is located southeast of the intersection of Douglas Boulevard and 59th Street on off-Base property near Gate 29. In 1989, the Army Corps of Engineers reported that the existence of a radioactive waste site in active use in 1966 at this site is based solely on a verbal report from a Tinker AFB employee. No contamination could be found at the site. The site has been designated as closed with No Further Response Action Planned (NFRAP I). The site was closed June 1, 1991. The relative risk assessment is not required (NR).

Site #RW029 Radiological Waste Disposal Site 1022 East

Radiological Waste Disposal Site 1022 East site is located northwest of Landfill 3 between Landfills 1 and 3. It was believed that radiological material (thorium objects and radium compass waste) was disposed of at the site in the 1950s. The site was excavated in June 1991 and one small aircraft part containing thorium was discovered. A final survey indicated no contamination at the site. A Decision Document (DD) with No Further Response Action Planned (NFRAP IV) was completed April 1, 1991 and the site closed on December 22, 1999. The relative risk assessment is not required (NR). The site is contained within the boundary of the CG038 groundwater contamination study area and groundwater will continue to be monitored as part of that study area.

Site #WP030 Pit Q-51

Pit Q-51 was located within Building 3001 and identified as an IRP site following a fire in November of 1984. The site is on the National Priorities List (NPL). The pit was below-grade, constructed of concrete and was used to store liquids from the engine overhaul process. Sampling showed the pit contained about 45 gallons of water contaminated with small amounts of TCE, cadmium, chromium and lead. A clean-up action involved removing the pit's contents, steam cleaning the pit and filling the pit with sand. The pit was then capped with concrete. The site was closed June 12, 1991. No Further Response Action Planned (NFRAP IV) has been accepted in the DD. The relative risk assessment is not required (NR).

Site #OT031 Bonnewell

This site is being addressed as part of the Soldier Creek/Off-Base Groundwater Operable Unit and as such was deleted as an IRP site on June 1, 1991. The site is designated No Further Response Action Planned (NFRAP I).

Site #ST032 3700 Fuel Yard

Located east of Building 3703, the site originally served as a jet fuel storage depot from the mid-1950s to 1991 and consisted of 6 Underground Storage Tanks (UST), each having a capacity of 25,000 gallons of JP-4 fuel. All 6 tanks were installed in 1954 and removed in 1991. Two investigations found solvents and jet fuel contamination in the soils and groundwater, suggesting there may have been spills or leaks from the tanks. They further suggest that contamination could have come from engine operations in Building 3703. During Phase I investigations in 1991, 3 monitoring wells were installed. During Phase II an additional 5 soil borings were cored and analyzed. Bioventing of the soils was initiated in January of 1993 as an interim remedial action to reduce contaminant sources. The site was investigated from 1993 to 1994 to determine the extent of fuel contamination in the soils and groundwater. A Decision Document (DD) was accepted October 1, 1994. The bioventing system was expanded by the addition of 5 vent wells and 13 vapor monitoring points. Soil gas samples were collected periodically to determine the operational effectiveness of the system. In March of 1998 the bioventing system was turned off and the action considered complete on April 7, 1998. As of September 22, 1999, the site has closed. The relative risk assessment is not required (NR). The site is contained within the boundary of the CG039 groundwater contamination study area. Long-term monitoring of the groundwater will continue as part of CG039.

Site #ST033 Area A Service (Fuel) Station

Located south of Building 414, the Area A Service Station served as a motor fuel station from 1942 until it closed in 1990. Gas and diesel fuels were stored in 4 Underground Storage Tanks (UST). Two (2) of the tanks held 12,000 gallons and were used for leaded and unleaded mogas storage. The 3rd tank stored unleaded gas and was taken out of service when the station closed in 1990. The 4th tank installed in 1975 was used for diesel storage until taken out of service in 1990. Soils and groundwater investigations conducted in 1990 and 1992 showed the presence of mogas contamination. A product recovery system was installed in 1992 to pump fuel from the groundwater. The extent of soils contamination has been delineated. A Decision Document (DD) was accepted on June 1, 1996. Remediation began June 1, 1998. The USTs were removed and the product recovery system expanded. The system continues to run and quarterly reports are written. The remediation and site closure is scheduled for completion September 15, 2007. The relative risk assessment is not required (NR).

Site #OT034 Industrial Waste Treatment Plant and Associated Components

The Industrial Wastewater Treatment Plan (IWTP), located in the northeast corner of the Base, is the process treatment plant for all industrial wastewater generated at Tinker AFB. Contaminants found in soils during Phase I of the Resource and Recovery Act Facility Investigation (RFI) included metals, volatile organic compounds, semi-volatiles and phenolic compounds. Only soils are considered part of this site. Groundwater under the site is being considered under Site #OT005, Soldier Creek Groundwater. The relative risk assessment for the site is medium. A Decision Document (DD) is scheduled to be completed by April 2004. Site closure for groundwater is anticipated to be in January 2016.

Abandoned Waste Tanks

Abandoned waste treatment tanks were located in the southwest corner of the IWTP. A 1989 Final IRP Report found soils contamination below 3 of the 11 tanks. The tanks were removed during an interim remedial action August through October in 1992. The proposed soils cleanup levels were achieved in all 11 excavations, with residual contaminants in the soils well below the proposed cleanup levels. Contamination in the removed soils contained low levels (less than 3 parts per million) of F-listed solvents such as 2-butanone, tetrachloroethylene and total cresols. During the remedial action, the tanks and associated contaminated soils were excavated. The excavations were tested and backfilled with impermeable clay. All but two (2) were capped with an asphalt road base.

Sanitary Wastewater Treatment Plant

The Sanitary Wastewater Treatment Plant (STP) was located adjacent to the northeast corner of Tinker AFB within the IWTP. The plant was constructed in 1943 to treat all domestic/sanitary sewage from the east portion of the Base. A vacuum enhanced pumping system was installed in late 1999. All units of the STP have been removed.

Site #WP035 Building 17 Discharge Ditch, Soils and Pad

Located in the north-central section of Tinker AFB, Building 17 was constructed in the 1950s as a paint shop. Over the years, various paints and solvents were stored outside in a paved fenced area adjacent to the facility. The paved area drained to a storm water culvert on the southwest corner of the site. During remediation of the site in August of 1992, the concrete pad and soils under the storage area were removed and an extensive survey found no contamination. The site was closed September 29, 1992. The site is designated as finished with No Further Response Action Planned (NFRAP III). Long-term monitoring was implemented under Phase II of the RFI. The relative risk assessment is not required (NR).

Site #WP036 Purge Facility/ Turnaround Soils

The purge facility was located in the east-central portion of the Base, approximately 400 feet southwest of Building 2121 and 2000 feet west of Douglas Boulevard on the east edge of Tinker AFB. North of the site was a hanger building with a large concrete apron where aircraft maintenance was performed. From 1975 to October of 1990 the facility stored left-over aircraft fuel. The fuels were purged from the aircraft into a metal above ground bunker. An overflow port, designed to allow fuel to settle, led into an above ground pipe that extended down slope to (2) above-ground storage tanks (AST). Once these (2) ASTs were full, the fuel was transferred to 1 of 6 additional above ground storage tanks located nearby. This operation contaminated adjacent soils. In 1991, contaminated soils were removed from the site, followed by an investigation in 1992 to further delineate site contamination. In 1993, an RFI Phase I investigation was performed at the site with Total Petroleum Hydrocarbons (TPH) detected as the principle contaminant of concern. In 1994, the 8 above ground storage tanks, above ground bunker and above ground pipe were removed. The entire system was replaced with a double-walled fiberglass underground storage tank fitted with a leak detection system and connected to a Roper pump to allow for down loading of the fuel to the UST. The Decision Document (DD) was completed on October 13, 1999. The site was closed on August 31, 2001. The site is contained within the boundary of the CG039 groundwater monitoring unit and groundwater will continue to be evaluated and monitored as part of CG039.

Site #CG037 Northwest Contaminated Groundwater Management Unit Site

The Northwest Contaminated Groundwater Management Unit is a geographical region located in the Northwest quadrant of Tinker AFB defined for the purpose of monitoring groundwater for contaminants that come from a variety of sources resulting in contaminated groundwater. This site includes several IRP sites, Site #WP017, Supernatant Pond; Fire Training Area #1; Site #OT009, Crutch Creek Site and Site #OT010, Sludge Drying Beds (SDB), Old Pesticide Storage Area (OPSD) and Kuhlman Creek Site. The relative risk assessment is medium. The Corrective Measures Study (CMS) was completed on July 24, 2003 and the Decision Document (DD) was completed on January 13, 2004. Hotspot treatment has been initiated via research-oriented pilot studies. The ultimate remedial technology for CG037 is Monitored Natural Attenuation (MNA) with Institutional Controls and Long-term Monitoring (LTM). Risk Assessments will be completed in order to obtain site-specific risk based cleanup levels. Site closure is anticipated to occur in December 2012.

Site #SWMU-14 Solid Waste Management Unit Sludge Drying Beds Site

The Sludge Drying Beds (SDB) site consists of eight sludge drying beds that were used to passively dewater wastewater treatment plant sludge from the municipal wastewater treatment facility (no longer in use). The sludge drying beds are arranged on the opposing ends of two digesters, with four beds on north side and four to the south. Each bed includes approximately 1,875 square feet, and is 75 feet long, 25 feet wide, and 3 feet deep. The area between the two sets of drying beds is occupied by two concrete vessels used as sludge digesters. Under the Phase II RFI conducted by IT, site evaluation was performed by installing eight additional borings around the perimeter of the SDB site for collection of surface and subsurface soil samples. A total of 29 soil samples were collected and analyzed for VOCs, semivolatile organic compounds (SVOC), metals, pesticides/polychlorinated biphenyls (PCB), and herbicides. The soils at the SDB site were potentially contaminated with two organic compounds, chlordane and methylene chloride, and the metals barium and iron. Based on the Base-wide Groundwater report in 1997, constituents exceeding SSLs/UTLs in the soil at the SDB site had impacted groundwater beneath the site. The subsurface soil analytical data indicated that 9 VOCs, 1 SVOC, 2 herbicides and 14 metals were detected in the samples. In view of the findings of this Phase II RFI, it was recommended that no further characterization be performed at this site.

Site Old Pesticide Storage Area

The OPSA (at Building 1005) is located on the west side of the base directly west of Air Depot Boulevard. Building 1005 was constructed as part of a sanitary waste treatment plant that was operational from the early 1950s until 1971. Under the Phase II RFI conducted by IT, site evaluation was performed by installing three additional borings around the perimeter of the OPSA site for the collection of 10 surface and subsurface soil samples. Eight metals were detected in the surface soils: aluminum, barium, beryllium, chromium, iron, mercury, nickel, and zinc. These metals were detected at varying concentration levels in the surface soil samples. Beryllium was detected at a concentration level that exceeded SSL; however, its UTL background concentration level was not exceeded. This indicated that the beryllium was not indicative of soil contamination. None of the other metals were detected in concentration levels exceeding either their respective 95-percent background UTLs or their risk-based SSLs. NO organic constituents (volatile organic compounds [VOC]), semivolatile organic compounds (SVOC), polychlorinated biphenyls, pesticides, or herbicides were detected in any of the surface samples. The subsurface soil indicated that two herbicides and nine metals were detected. Although VOCs, SVOCs, pesticides and metals were detected in the soil samples collected, neither the organic constituents nor the metals were detected at concentration levels exceeding their respective SSLs or background UTLs. In view of the findings, it was recommended that no further characterization be performed at the OPSA site.

Site #CG038 Southwest Contaminated Groundwater Management Unit Site

The Southwest Contaminated Groundwater Management Unit is located in the southwest quadrant of Tinker AFB. It was defined for the purpose of investigating groundwater contamination that may come from a variety of sources resulting in contaminated groundwater. This site includes 8 IRP sites: Site #LF011, Landfill 1; Site #LF012, Landfill 2; Site #LF013, Landfill 3; Site #LF014, Landfill 4; Site #FT024, Fire Training Area #4; Site #RW025, Radiological Waste Disposal Site 1030 West and Site #RW027, Radiological Waste Disposal Site 62598, and Site #RW29, Radiological Waste Site 1022 East, as well as other potential contaminant sources such as barrel re-drumming and storage areas and aircraft facilities. An interim pump and treat system was completed for the site in 1998; the system has been operative since March 1999. In addition, all four landfills have RCRA compliant caps. A Remedial Investigation (RI) was completed in 2003 and a Corrective Measures Study (CMS) is nearly complete. Site characterization work for installation of a permeable reactive barrier across the GWMU-2D plume is currently in progress. The relative risk assessment is high. Site closure is anticipated for July 1, 2020.

Site #CG039 East Contaminated Groundwater Management Unit Site

East Contaminated Groundwater Management Unit is a geographical region located in the Southeast quadrant of Tinker AFB defined for the purpose of monitoring groundwater for contaminants that may come from a variety of sources resulting in contaminated groundwater. This site includes six IRP sites: Site #LF015, Landfill 5; Site #WP018, Industrial Waste Pit #1; Site #WP019, Industrial Waste Pit #2; Site #FT022, Fire Training Area #2; Site #FT023, Facility 1123; Site #ST032, 3700 Fuel Yard and Site #WP036, Purge Facility/Turnaround Soils. The area also includes an Industrial Waste Basin, recently found on aerial photographs, which was thought to operate from the mid-1940s to the early 1950s and an Area of Concern (AOC) known as the Fuel Truck Maintenance Facility. Remedial Investigation is in process and will be completed in February 2004. The relative risk assessment is high. Site closure is anticipated for October 1, 2023.

Site #CG040 Gator Facility Contaminated Groundwater Management Unit Site

The Gator Contaminated Groundwater Management Unit was designated as an IRP Groundwater Site in 1996. It is located at an adjunct facility approximately one mile east of the eastern boundary of Tinker AFB near the intersection of SE 59th St. and Post Road. The facility is non-industrial; only one building used for administrative purposes is found at the site. Chlorinated solvents above regulatory limits have been detected in the groundwater since the first monitoring wells were placed at the site in 1995. No unique source has been identified for this contamination. A chlorinated plume has impacted shallow groundwater in the Upper Saturated Zone (USZ) and Lower Saturated Zone (LSZ); both are part of the Garber-Wellington aquifer. Residences with private wells are extremely close to the site, one within 50 feet. This well has been tested several times by the Oklahoma DEQ and shows no contamination.

An interim extraction and treatment system is currently in operation. The extraction system consists of two french drain segments in the USZ and a single pumping well in the LSZ. Contaminated groundwater is being pumped to an air stripper designed to treat chlorinated solvents to drinking water standards or better. This passive extraction system is currently being evaluated to determine if it can become the final remedy for the site. The single pumping well in the LSZ is anticipated to be able to capture the entire LSZ plume; surrounding wells will be monitored to ensure capture. For disposal, treated groundwater is pumped into a sanitary lift station located near the site. The relative risk is assessed as high. Remedial Investigation was completed December 31, 2003, and the action completion date is on June 30, 2009. The scheduled closure date is June 30, 2014.

Section IV

IV. COMMUNITY BACKGROUND

A. Description of Surrounding Community

The Tinker AFB community is situated within the corporate limits of Oklahoma City and borders Midwest City and Del City, as shown in Figure 1. Oklahoma City was established on the afternoon of April 22, 1889, when thousands of pioneers crossed the borders of the unassigned lands at the sound of gunfire at high noon. By nightfall, thousands had staked their claims in the area known today as Oklahoma City. It has since grown to become the 28th largest city in the United States, covering over 620 square miles with a population of close to 473,000. Oklahoma City industries include oil processing and refining, livestock production, and agriculture. Oklahoma City has a manager-council form of government with eight councilmen and a mayor, all elected for staggered four-year terms and representing various wards.

Midwest City, located adjacent to Oklahoma City and north of Tinker AFB, has a population of almost 54,000 and covers a 25-square-mile area. It is primarily residential, with a large number of its citizens employed at Tinker AFB. It has a mayor and a manager-council form of government with four council members elected to four-year terms from designated wards in the city.

Del City, situated due west of Tinker AFB, has a population of 23,000 and covers eight square miles. It has a mayor, manager-council form of government with four council members elected to four-year terms from designated wards in the city. Like Midwest City, it is a residential community with many of its citizens employed at Tinker AFB.

Section V

V. COMMUNITY PROFILE

A. Level of Interest and Concern

Prior to 1982, community interest in the Base's IRP was minimal. According to the CERCLA CRP for Tinker AFB, dated July 1990, community concern regarding past disposal practices emerged in 1982, when an EPA report noted that a very low level of industrial solvent was present in a groundwater sample taken from a Base drinking well. Since that time, local interest can be characterized as low-to-moderate.

In September 1989, EPA hosted an open house at the five Oklahoma City/Metro Area Superfund sites, one of which is Tinker AFB, to provide the public with an opportunity to meet with project managers and discuss remedial alternatives. On April 5, 1990, Tinker AFB held a public meeting to present the proposed plan for remediating groundwater contamination beneath Building 3001, along with proposed plans for cleaning up Pit Q-51 and the North Tank Fuel Area. Over 100 citizens attended the meeting and were encouraged to participate in the discussions so that all comments could be considered before final plans for the ROD were selected.

In December 1990, state health officials warned seven residents north and east of the base not to drink their water after solvents were found in their privately-owned wells. As a precautionary measure, Tinker AFB provided bottled water to these residents while a study was launched by Base officials to pinpoint the source and extent of contamination. A public/information meeting was conducted by Base officials on November 5, 1992 to address concerns from citizens living in the Kimsey Addition near the Industrial Wastewater Treatment Plant (IWTP). Residents voiced concern about IWTP odors, Soldier Creek groundwater, and progress of cleanup efforts on Base. Specific issues included health problems, perceived loss of real estate values, jet noise, and frustration resulting from federal, state and local agency bureaucracy. Tinker hosted a public meeting in April 1993 to discuss the proposed plan for cleaning up Soldier Creek sediment and surface water.

Community interviews conducted by the Tinker AFB Office of Public Affairs and Directorate of Environmental Management in February 1992, augmented by informal telephone contact with residents/officials and door-to-door canvassing initiated in December 1992, revealed that citizens living in areas surrounding the Base are concerned about aquifer and private well-water quality, migration of contamination, air pollution and other environmental health issues. Many citizens expressed praise during the February 1992 interviews for the Base's aggressive activity to clean up its waste sites. Residents surveyed during the February 1992 community interviews and those who attended the public meetings exhibited general knowledge of the Tinker AFB IRP and RCRA corrective actions.

Employees and personnel living on Base have historically exhibited limited concern about IRP sites. Notwithstanding, some concern as to potential health hazards has been voiced during confidential interviews of Base employees who work in and around the Building 3001 NPL site.

According to the February 1992 community interview responses, citizens were satisfied with the environmental public information program, specifically noting the Tinker AFB Environmental Action Update. However, some respondents requested more technical updates and presentations by Base officials on site cleanup status to include additional fact sheets on response activities. The community also showed a preference for increasing the amount of public and information meetings chaired by the Base.

A number of citizen groups have been relatively active in Base environmental issues, attending public and information meetings, organizing neighborhood association meetings, and contacting Base officials regarding various questions on CERCLA and RCRA sites.

Media interest in environmental issues has fluctuated since the mid-1980s. The December 1984 Congressional Subcommittee hearings held in Midwest City, Okla., and the August 1985 General Accounting Office (GAO) report on waste cleanup and disposal efforts at Tinker AFB triggered an upswing in media interest. After several weeks of media activity, interest once again died down. Two significant events occurred in July 1987, stimulating renewed interest. GAO issued a follow-up report acknowledging Tinker's progress in environmental cleanup and EPA added Building 3001 to the NPL. In 1991 and 1992, print and broadcast media interest surged, covering issues on possible private well contamination in residential areas off Base. Several follow-up reports on this issue appeared in the media, which highlighted the Base's extensive monitoring well study to determine if contamination was present. Media interest continued to center around groundwater quality with coverage in 1993 on the NPL Operable Unit of Soldier Creek.

Special interest groups and state regulatory agencies have announced their concern regarding possible contamination of the Garber-Wellington aquifer. A principle water supply for eastern Oklahoma, the aquifer and an area of its recharge system lies beneath Tinker AFB.

In the summer of 1992, responding to complaints from local residents concerning odors at the Industrial Wastewater Treatment Plant, Tinker AFB hired a contractor to take approximately 2,000 air samples and provided the sampling results to the Agency for Toxic Substances and Disease Registry (ATSDR) for review. The agency determined that air emissions released by the plant are neither a long-term nor short-term health risk.

A voluntary public meeting was held in April 1994 to inform the public of these findings and educate them on steps the base was taking to further reduce odors in the future. On November 4, 1994, ATSDR conducted a follow-up meeting to report their findings of no neither long-term nor short-term health risks to the public.

In January 1996, the ATSDR completed its *Public Health Assessment Addendum of Tinker AFB (Soldier Creek/Building 3001), Midwest City, Oklahoma County, Oklahoma, and CERCLIS No. OK1571724391*. Based on the data and information evaluated, the ATSDR placed Tinker AFB (Soldier Creek/Building 3001) in the category of no apparent public health hazard.

In August 1998, media interest surged based on the ATSDR's publication of the *Health Statistics Review of the Community Adjacent to Tinker Air Force Base*. The ATSDR conducted this study in response to community health concerns and past exposure to airborne contaminants such as solvents. The study used vital records data to evaluate cancer mortality and adverse birth outcomes. The results of analyses of death certificates indicated that there were no overall excess cancer deaths in the Kimsey Addition when compared with the state and city cancer rates for the period from 1965 to 1994. The results of analyses of birth certificates indicated that prevalence rates for low birth weight and pre-term birth were lower in the Kimsey Addition than in the rest of Oklahoma City over the entire study period.

In late 1998 and through mid 1999, the Base Office of Public Affairs and the Oklahoma Department of Environmental Quality (ODEQ) began receiving numerous odor complaints. Base environmental personnel met with the ODEQ and issued a special edition of *The Environmental Link* newsletter in an effort to address the communities' concerns about the odor emanating from the IWTP. Also, an update briefing on the IWTP odor was an agenda item for the July 1999 Community Advisory Board (CAB) meeting.

In August 2000, TCE (believed to have originated in landfills on the southwest portion of the base) was discovered in private drinking water wells in the Tinker View Acres (TVA) addition located at the southwest corner of the base. TAFB acted quickly to assist residents affected by the contamination, providing them with bottled water and carbon filtration systems for drinking water until they were supplied with city water.

Residents were contacted one-on-one by the EM/Public Affairs team to gather input and ensure they were kept informed. Residents participated in decision-making and were updated with current information through informational pamphlets, the EM Web site (<http://www-ext.tinker.af.mil/em/>), a dedicated e-mail account, and quarterly CAB meetings. As of January 2004, residents continue to be informed as the design and construction of the final cleanup remedy, a Permeable Reactive Barrier

(PRB), progresses.

Openness and responsiveness from the very beginning continue to rebuild trust and ease concerns of TVA home owners. Sustained openness and public involvement will continue throughout the restoration process.

Section VI

VI. COMMUNITY RELATIONS GOALS

Based on the Tinker AFB local community profile and the Base's desire to satisfy the environmental information needs and concerns of its neighbors, Base leadership has set, and strives to achieve, the following goals:

(1) Promote two-way communication between Tinker AFB and the community.

(2) Encourage participation of local officials in community relations activities. These officials are visible and trusted leaders of the community, and it is essential that they be regularly and fully informed of site activities, plans, findings, and developments. Various county administrators and directors are included as well as elected officials. A cooperative effort means that information of mutual interest is shared and surprises are avoided.

(3) Enlist the support of other business and environmental associations in the community. The Oklahoma County Chamber of Commerce and its constituent members, and the Oklahoma City, Del City, and Midwest City Councils can provide a base of advocacy for Tinker AFB and its presence in the community. The Chamber has the ability to reach the majority of commercial interests in the region through its newsletter and membership programs. There are a number of active environmental organizations in the county. Among them are the Sierra Club, Environmentally Concerned Citizens, Inc., and the National Toxics Campaign. These groups have mailing lists and other communication mechanisms that could be accessed to provide information on Base environmental activities. Communication with key members of these groups is a priority.

(4) Facilitate support and participation of Tinker AFB employee groups and associations in community relations activities. Tinker AFB has a number of active groups whose combined memberships represent over 80 percent of the Base population. These groups include, but are not limited to, the American Federal of Government Employees, Company Grade Officer's Association, Airmen's Wives Club, Officer's Wives Club, NCO Association, Tinker Management Association, Gerrity Chapter of the Air Force Association, and several Toastmasters chapters. Each of these organizations, with their active programs and member participation, are a valuable channel through which information flows to the Base and local community. To maintain support from these organizations, it is essential that they be regularly and fully informed of environmental activities, plans, findings and developments.

(5) Provide ongoing information updates to the public and media on restoration progress.

To keep the community apprised of environmental activities, Tinker AFB should continue to disseminate information to the mailing list (see Section VII, Part C1). News articles may also be published in both the Base's "Tinker Take Off" newspaper and community newspapers. Residents should regularly receive information on results of sampling and possible subsequent impact on human health and the environment, criteria used to select cleanup alternatives, and the schedule of planned activities during the RI/FS and RD/RA phases, as well as in the RFI and CMS phases.

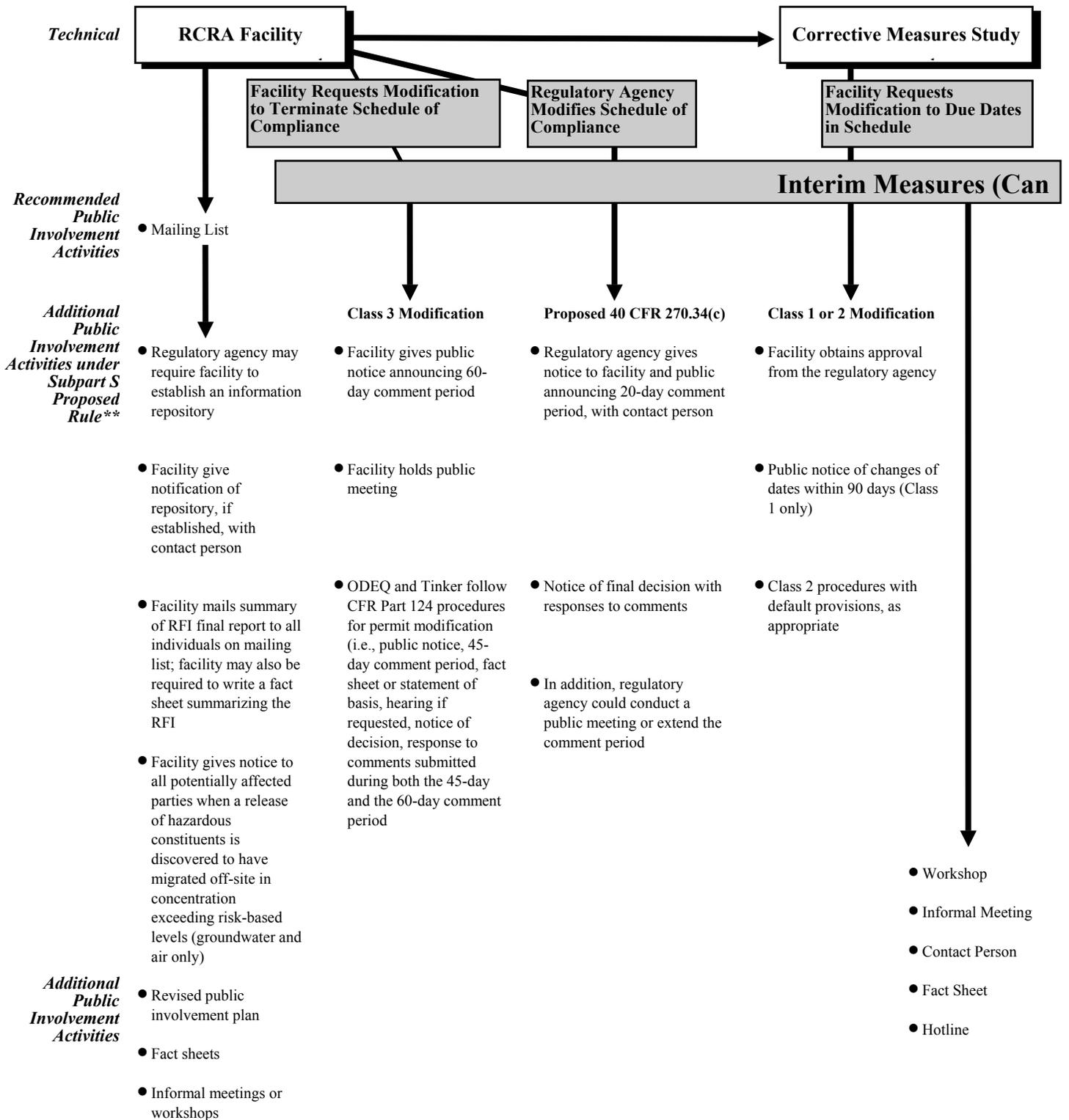
(6) Keep the media up-to-date with accurate program information. The media, especially the print media, is a major resource for information dissemination. The Base's weekly publication, the "Tinker Take Off", is widely read by military personnel, civilian employees, and their families. The Daily Oklahoman, Midwest City Sun, and several other local newspapers should be utilized for substantive news and feature articles that spotlight environmental restoration and pollution prevention programs at Tinker AFB. Three Oklahoma City television stations and seven radio stations also may be relied on for public service announcements providing dates and locations of public meetings and other events related to the Base's IRP and RCRA corrective actions.

(7) Monitor and respond to community inquiries in a timely, professional manner. To ensure that all inquiries are handled efficiently and consistently, a Tinker AFB Environmental Public Affairs Specialist was hired to monitor community concerns, coordinate community relations aspects of the IRP and RCRA, and respond to public and media inquiries on environmental programs.

(8) Maintain a proactive stance. Tinker AFB strives to disseminate pertinent information and organize public outreach activities (i.e., information meetings) before the public requests these activities in order to foster trust and credibility with the community.

Section VII

Figure 4 Public Involvement Activities in the RCRA

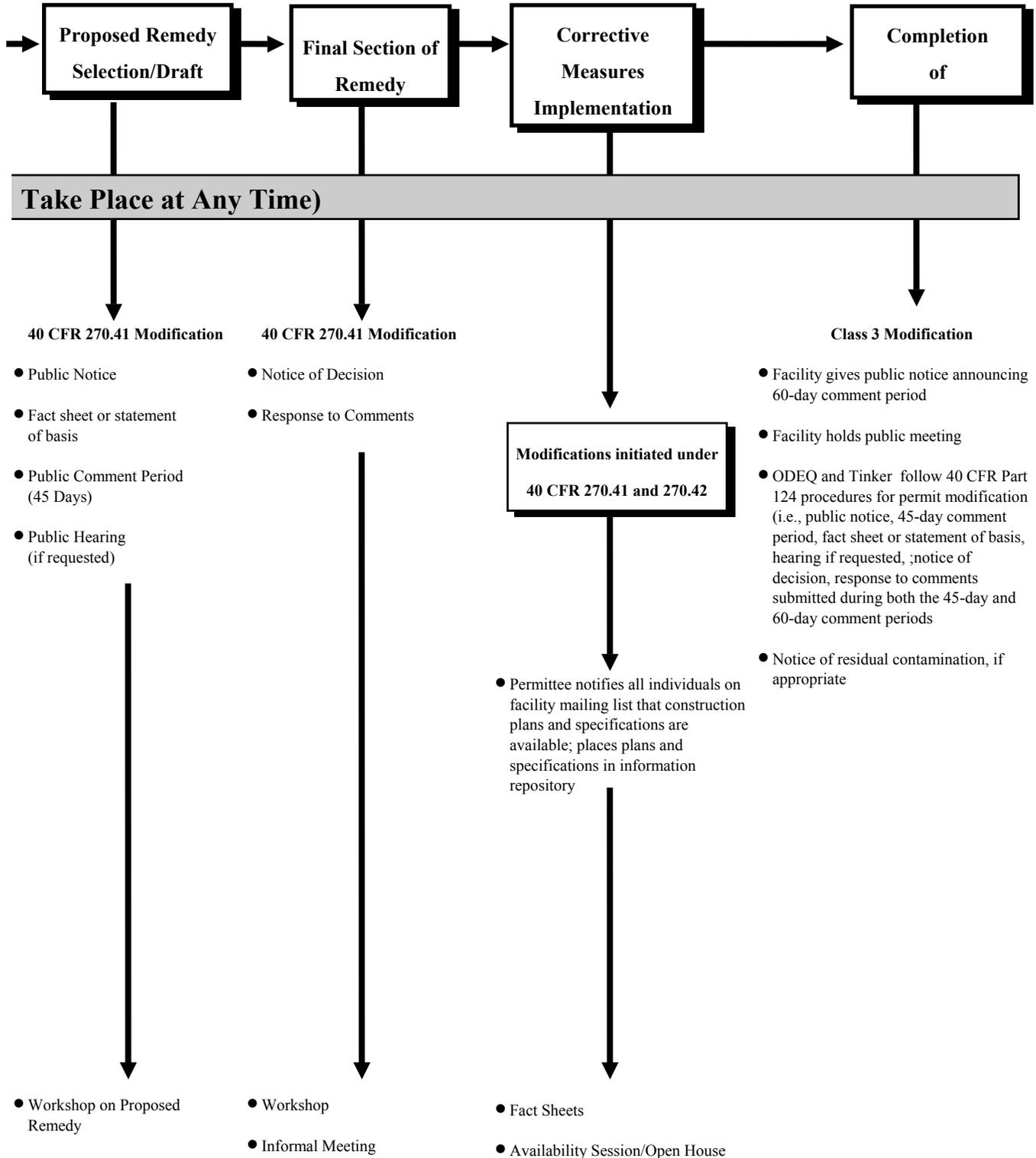


* These activities are strongly encouraged, but not required, for corrective action under §3008(h) orders.

** Activities included in proposed rules under 40 CFR 264 and 270, 55 FR 30873 ff

¹ The public has the opportunity for notice and comment on the permit schedule of compliance for corrective

Corrective Action Process (During RCRA Permitting)



² As indicated in this exhibit, the public receives notice of and has the opportunity to comment on the permit schedule of compliance for corrective measures implementation during the remedy selection modification under

VII. COMMUNITY RELATIONS WORK PLAN

A. Coordinate with Agencies

Tinker AFB coordinates with EPA, Oklahoma Department of Environmental Quality (ODEQ), and local agencies on oversight and review of environmental restoration activities at the Base. These representatives convey to the public that the restoration process is a proactive and positive effort that is clearly visible and accessible to the public, and that the process is being directed in a manner that will assist in preserving the environment. Appendix B provides information on federal, state, and local elected and appointed officials.

B. Tinker AFB Spokesperson

Tinker AFB appointed a single point of contact (Environmental Public Affairs Specialist) that makes it clear to the public that concerns related to CERCLA and RCRA issues are significant to the Base and will be given serious consideration at the highest command levels. Tinker AFB also designated a senior staff member to lend both credibility and objectivity to the spokesperson's interactions with military personnel, civilians, and the media.

C. Community Relations Techniques

The following community relations techniques will be used to achieve this CRP's goals and objectives:

(1) Mailing List — Tinker AFB has compiled a mailing list of local residents, local, state and federal regulatory agencies, government offices, the news media, and other interested parties. Those on the list (currently about 300+), receive a quarterly newsletter, *The Environmental Link*, fact sheets, news releases, meeting notices, and other important information. The list is continuously updated to ensure the Base is reaching all interested persons.

(2) Information Repository — An information repository has been established at the Midwest City Public Library (8143 East Reno, Midwest City, OK 73110) and the Tinker AFB Office of Environmental Management, Bldg. 1. The information repository houses technical and site reports, the Management Action Plan, fact sheets, the CRP, and other pertinent information regarding the Base's IRP and RCRA activities.

(3) Administrative Record — CERCLA Section 113(k) requires that an Administrative Record be maintained, which is a compilation of all documents that have contributed to remediation decisions made at the facility. The record must be maintained for at least 50 years after remediation is completed to serve as a legal resource and public information.

(4) The Environmental Link — The Community Advisory Board (CAB) and Base environmental personnel distribute a quarterly publication, called *The Environmental Link*, formerly known as the Environmental Action Update, mailed to those on the environmental mailing list. Created to keep the public apprised of all environmental activities, the newsletter contains information on upcoming Community Advisory Board (formerly the Restoration Advisory Board) meetings, project milestones, and new technology used to remediate contamination. The “Environmental Link” also announces the opportunity for public participation through various base meetings and events.

(5) News Releases — News releases are used as a vehicle to announce public meetings and the start of public comment periods in conjunction with project benchmarks such as completion of the RFI or draft FS and prior to remedial action. News and feature articles are periodically released to the Tinker Take Off and local media on topics ranging from pollution prevention achievements, site cleanup status, and project milestones to announcement of public participation opportunities through base meetings and events.

(6) Public Meetings — Tinker AFB has hosted a number of public meetings and will continue to do so in response to community concerns and at significant stages in the IRP and RCRA corrective actions. Meetings will be announced on radio stations, in *The Environmental Link* newsletter, and through public notices placed in Base and local newspapers. Public meetings provide additional information to citizens as well as an official forum for public comment.

(7) Public Comment Period — Under CERCLA, a public comment period may be provided at specific benchmarks in the restoration process. At CERCLA sites, a public comment period is required at the publication of the proposed plan. When a ROD is signed, we publish a public notice of availability. Through public notices, residents are informed of the comment periods and encouraged to review technical documents at the information repository and administrative record locations. Comments received are processed within the comment window by Office of Environmental Management for consideration by EPA and state agencies before any decision-making takes place on proposed actions.

(8) Responsiveness Summaries — Administered by Tinker AFB, these summaries are a required component of the ROD. The document condenses the concerns, comments, and issues raised by citizens during the public comment period and reflects Tinker AFB’s responses.

(9) **Fact Sheets** — Fact sheets focus on a single site or issue to explain to the public technical aspects and milestones pertaining to site restoration, or to announce upcoming activities. Fact sheets will continue to be used as CERCLA and RCRA programs progress.

(10) **Special Events** — Various events such as Arbor Day celebrations, Earth Day observances, open houses, and tours can be used as a way to elevate the public's knowledge and understanding of Base environmental programs.

(11) **Informal Meetings** — Informal meetings/briefings are effective ways to communicate with local officials, employees, groups/associations and residents regarding site restoration status, and as a means to identify emerging community concerns and needs. Meetings may be planned whenever it is deemed necessary during the lengthy restoration process or in response to a specific group's request.

(12) **News Media Coordination** — Press conferences, media inquiries, news releases and answers to queries are coordinated through the Tinker AFB Office of Public Affairs. Media site visits are provided routinely and arranged through Public Affairs as well. A listing of media contacts is provided in Appendix D.

(13) **Contact with Public Officials and Community Members** — The Environmental Public Affairs Specialist maintains contact with key community members and public officials. These individuals should be kept apprised of Tinker AFB environmental activities and site cleanup progress so that they may relay this information to their constituencies.

(14) **Restoration/Community Advisory Board** — A RAB was formed to enhance the base's community outreach efforts. It replaced the base's Technical Review Committee, which was established in 1985. In 1999 the RAB transformed into the CAB, meaning the board would consider other environmental protocol issues, but would keep environmental restoration review as its main focus. The CAB is an advisory body designed to act as a focal point for the exchange of information between Tinker and the local community. It brings together a diverse coalition of community members who reflect the interests within the local community, enabling early and continued two-way flow of information, concerns, values, and needs between the affected community and base.

(15) **Community Relations Plan Update** — The CRP will be updated whenever Tinker AFB undergoes a major change in its environmental restoration programs and as community concerns and needs change. The document will be reviewed and updated as necessary so that it reflects the current cleanup status and tracks community interest and concern.

Figure 5 CERCLA IRP Timing

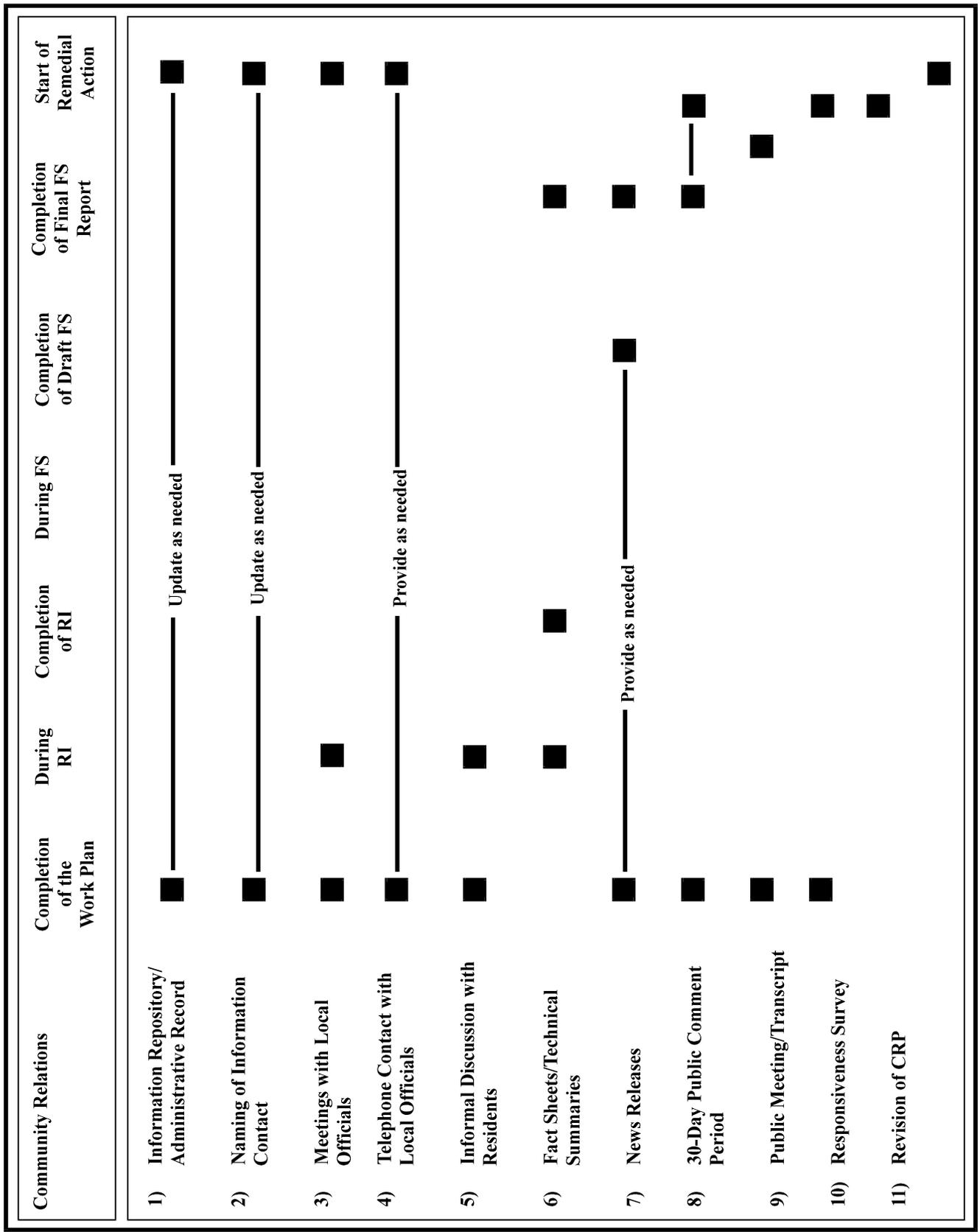


TABLE 3 CERCLA Activities

<i>ACTIVITIES KEY</i>	<i>CERCLA Public Information & Participation through The Year 2003</i>			
<i>Established</i>				
<i>Activities >></i>				
<i>Required Activities:</i> ## <i>Recommended Activities: ++</i>				
<i>COMMUNITY RELATIONS ACTIVITIES</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
<i>“The Environmental Link” newsletter</i>	>> <i>Quarterly</i>	>> <i>Quarterly</i>	>> <i>Quarterly</i>	>> <i>Quarterly</i>
<i>Fact Sheets</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>
<i>News/Feature Articles</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>
<i>Media Coordination</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>
<i>Information Meetings</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>
<i>Update CRP</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>
<i>Tours</i>	++ <i>As requested</i>	++ <i>As requested</i>	++ <i>As requested</i>	++ <i>As requested</i>
<i>Presentations/Briefings</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>	++ <i>RI/FS, RD/RA</i>
<i>Update Information Repository</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>
<i>Update Administrative Record</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>
<i>Community Interviews</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>	++ <i>As needed</i>
<i>Update Mailing List</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>	## <i>Ongoing</i>

Community Relations Plan

Community Relations Work Plan

<i>Special Events</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>
<i>Videos</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>
<i>Brochures</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>	<i>++ As needed</i>
<i>Responsiveness Summary</i>	<i>## Following ROD & RI/FS</i>			
<i>30-Day Public Comment Period</i>	<i>## Following RI/FS</i>	<i>## Following RI/FS</i>	<i>## Following RI/FS</i>	<i>## Following RI/FS</i>
<i>RAB/CAB Meetings</i>	<i>++ Quarterly</i>	<i>++ Quarterly</i>	<i>++ Quarterly</i>	<i>++ Quarterly</i>

Section VIII

VIII. RCRA COMMUNITY RELATIONS ACTIVITIES SCHEDULE**A. Corrective Action Process**

As discussed in Section II-B, the corrective action process begins with a RCRA Facility Assessment (RFA), which is conducted by the regulatory agency. If, after completion of the RFA, it appears likely that releases exist, the regulatory agency typically develops a schedule of compliance to be included in the facility's permit that details further studies and actions the facility must undertake to fulfill the responsibilities imposed by 3004(u) and (v). The public may comment on the schedule of compliance or corrective action when the permit is issued and any subsequent permit modification. Community concerns during corrective action may differ from concerns during permitting for a new facility. Accordingly, the community may require more information on issues related to current or potential contamination, including levels of contamination, the extent of health and environmental risks, and potential for future risks.

During the corrective action process, Tinker AFB restoration is progressing or will progress through the following key stages:

- (1) RCRA Facility Investigation (RFI);**
- (2) Corrective Measures Study (CMS);**
- (3) Proposed Remedy Selection;**
- (4) Final Selection of Remedy;**
- (5) Corrective Measures Implementation;**
- (6) Completion of Remedy; and**
- (7) Interim Measures or Stabilization** (which can take place any time in the process).

B. Techniques and Schedule

Taking into consideration the community's low-to-moderate level of interest in Tinker AFB environmental issues, this CRP uses the following community relations techniques:

(1) Phase I and Phase II of the RFI:

- To keep in touch with the community, fact sheets explaining the RFI's purpose and scope is issued to the mailing list early in the process, followed by periodic updates during the investigation. News articles updating the investigation are periodically released to the Base and local newspapers, including *The Environmental Link*. A Tinker AFB contact person is included in the fact sheet and news articles to whom questions/comments can be submitted.
- The mailing list is continuously updated so that members of the community are kept informed of corrective actions. When completed, the summary of the RFI report is mailed to those on the mailing list along with fact sheets summarizing the final RFI report.
- The information repository receives updated documents and reports as they become available. News briefs are periodically placed in the Base and local newspapers announcing the availability of documents housed in the information repository.
- Meetings and/or briefings are conducted if the community expresses a desire for additional information on the investigation.
- Once the RFI is completed, it is appropriate to re-evaluate community concerns and the level of public involvement based on any new information gathered. If public needs or concerns have changed, the CRP is revised accordingly.

(2) Corrective Measures Study (CMS):

- Hosting periodic informal meetings/briefings about the CMS process, remedies under consideration and activities being conducted at the Base is an effective way to keep the community involved and informed.
- A telephone hotline may be established if a large number of residents call the Base or regulatory agency with questions on the restoration effort. Availability of the hotline can be advertised in the Base and local newspapers and/or via the mailing list. If the hotline is used, a logbook of citizen requests and comments will be maintained along with a statement of how each request is handled.

(3) Proposed Remedy Selection:

- Information on the corrective action design explaining the proposed modification and significant factual and legal reasons for proposing the remedy are briefed to the Community Advisory Board (CAB). Following the CAB meeting, comments and/or additional data may result in changes to the remedy or in, the choice of another remedy.
- The affected community may request a public hearing on the draft permit modification. If a hearing is requested, a 30-day notice must be given to the public, which includes the date, time and location of the hearing. A public hearing may also be held even if the public does not request one.
- Updates explaining the proposed remedy are published in *The Environmental Link*.

(4) Selection of Remedy:

- A notice of decision is sent to those who submitted public comments or requested a notice of the final decision.
- Written response to comments are prepared summarizing all significant comments received with an explanation of how they were addressed in the final permit modification or why they were rejected. The response to comments is made available to the public through the administrative record and information repository.

(5) Corrective Measures Implementation:

- Periodic fact sheets describing the pace and scope of the cleanup operation are issued to the mailing list. News releases during the cleanup effort may also be released to the Base and local newspapers.
- Those on the mailing list are notified that construction plans and specifications are available for inspection in the information repository.
- An informal meeting or availability session is suggested at this juncture to demonstrate and explain the activities involved in the restoration effort.

(6) Completion of Remedy:

- Once restoration has been completed at a site, the Base may request a permit modification to remove the site from the permit. Because this represents a significant

change to the existing permit, the Base will issue a public notice and provide a 60-day public comment period and public meeting. After the conclusion of the comment period, the regulatory agency initiates permit issuance procedures of 40 CFR Part 124 for a Class 3 modification. This modification requires the regulatory agency to publish a notice allowing a 45-day comment period on the draft permit modification and approve or deny the permit modification. During this process, ODEQ considers and responds to all written comments received during the 60- and 45-day public comment periods.

- Updates announcing completion of the clean up are published in *The Environmental Link*.

(7) Interim Measures:

- ODEQ may require interim measures and/or stabilization at any time during the RFI or CMS in situations where contamination poses an immediate threat to human health or the environment.
- Fact sheets describing the interim measure are issued to the mailing list and news releases on the subject released to the Base and local newspapers as well as *The Environmental Link* newsletter.

Section IX

IX. CERCLA COMMUNITY RELATIONS ACTIVITIES SCHEDULE**A. Techniques and Schedule**

The following community relations activities have been accomplished for the Tinker AFB Installation Restoration Program under CERCLA:

(1) Prior to approval of remedial investigation (RI) work plans:

- Establish contact with state and local officials, the office of area Congressional members and with key citizens (accomplished in 1982).
- Identify key community leaders and organizations (accomplished in 1982).
- Develop a mailing list of concerned citizens (continuously updated).
- Identify locations for the information repository (located in the Midwest City Public Library and Tinker AFB Office of Environmental Management).
- Identify locations for meetings/briefings/workshops (Midwest City Public Library, Midwest City community center, Rose State College, and other locations).
- Designate a Tinker AFB point-of-contact qualified to answer questions from the community and media (currently the Environmental Public Affairs Specialist).

(2) Remedial Investigation (RI):

- Conduct community interviews with local officials, residents, and members of concerned groups/associations to identify community concerns (accomplished February 1992).
- Establish an information repository where site documents are made available for public review throughout the IRP process.
- Develop a general fact sheet on the overall IRP process taking place at Tinker AFB for distribution to area residents and/or concerned citizens.
- Distribute periodic news releases to Base and local media concerning the Tinker AFB IRP.

- Issue news briefs announcing availability of the information repositories and their locations.
- Issue fact sheets during the RI process describing technical activities.
- Conduct quarterly meetings of the Community Advisory Board (CAB).
- Hold informal meetings with the community to discuss RI findings.

(3) Following completion of the RI:

- Informal public meetings with local officials and area residents are arranged to discuss the findings and plans for the FS. This is in conjunction with, the CAB, but is also conducted in such a way as to review all information.
- Distribute fact sheets to those on the mailing list explaining technical activities and plans for the FS.
- Issue a press release updating site plans and RI/FS activities.

(4) Feasibility Study (FS):

Public concern usually peaks during the FS as residents wait to review the alternatives for site restoration. As such, the following activities are recommended for this stage of the IRP:

- Hold informal meetings with the public, interested groups and local officials explaining the extent of the cleanup effort, safety and health issues, and how community concerns are integrated into restoration decisions. Meetings provide the opportunity to solicit comments on criteria for evaluating and screening FS alternatives.
- Distribute fact sheets to those on the mailing list and news releases to *The Environmental Link* and Base and local newspapers that report RI/FS progress.
- Place site reports and other pertinent materials in the information repository and administrative record.

(5) Completion of the RI/FS:

- A notice of availability of the proposed plan, RI/FS report and notice of a 30-day public comment period will be published in a major local newspaper of general circulation (to include the Base paper and *The Environmental Link*) at least two weeks before the comment period begins. Local radio stations also may be utilized to announce availability of the documents and public comment period. The notice summarizes the alternatives analyzed and identifies the preferred alternative. It also explains how to submit oral/written comments, identify the location of the information repository, and names a contact person and how to reach him/her. The 30-day comment period may be extended an additional 30 days upon timely request from the community.
- If there is significant public concern about the preferred restoration alternative, holding an informal information meeting for local officials and residents will be held to summarize the plan, answer questions, and clear up any misconceptions or misunderstandings. The meeting will be announced in the Base and local newspapers, *The Environmental Link*, and through the mailing list. A transcript of the meeting will be placed in the information repository and administrative record for public review.
- Information obtained during the public comment period and from the informal meeting will be used to develop the responsiveness summary. This document is a summary of the issues, concerns and comments raised by citizens during the comment period. Additionally, it is useful in supplying information about community preferences in terms of specific remedial alternatives. The responsiveness summary is placed in the information repository, administrative record, and becomes a part of the ROD.
- A news release highlighting completion of the RI/FS will be published in *The Environmental Link* newsletter, Base and local newspapers and issued to those on the mailing list.

(6) Remedial Design (RD):

- Following the public comment period, the Base, ODEQ and EPA sign a ROD which explains the remedial action selected for the site. The ROD also includes Tinker's responses to comments received during the comment period. Once the ROD is signed, a public notice is placed in a major local newspaper announcing the decision and the availability of the ROD. The ROD is made available to the public through the site administrative record before initiation of any remedial action.
-

- Prior to remedial design, the CRP is reviewed to address new and changing community concerns. One method of evaluation is to determine the effectiveness of past community relations activities. Another technique is communicating with community groups and officials to identify any emerging concerns or interests, and inquire if their information/participation needs are being met through the information and public outreach programs. If the general consensus alludes to an ineffective program, Tinker AFB Environmental Management will update the CRP to include different kinds of community relations techniques suitable to the community's needs.
- When the final engineering design is completed, a fact sheet briefly explaining the design will be prepared and issued to the mailing list. Residents will be notified on the availability of the fact sheet by publishing a news brief/notice in *The Environmental Link* newsletter and Base and local newspapers.
- Supplemental news articles on the design will also be released to the media and to those on the mailing list.

(7) Remedial Action (RA):

- Before remedial action takes place at Tinker AFB, a community briefing will be conducted for residents, groups/associations, and local officials. The briefing will outline the cleanup plan and its objectives and indicate approximate time-frames for remediation. A news release will be provided through the Base and local media on the cleanup plan.
- During remedial action, the community is kept informed through updates released to those on the mailing list, *The Environmental Link* and Base and local newspapers regarding restoration progress and timetables, changes in the remedial action schedule, and any new findings at the site.
- An informal meeting or availability session will be scheduled to give the community an opportunity to meet face-to-face with Tinker AFB staff and discuss site issues.

APPENDICES

APPENDIX A

FEDERAL AND STATE AGENCY REPRESENTATIVES

(Points of Contact)

I. Tinker Air Force Base Representatives

Brion Ockenfels

Office of Public Affairs
OC-ALC/PA
Tinker Air Force Base, OK
73145-5000
(405) 739-2027

**II. U.S. Environmental Protection Agency
Region VI Representatives**

Robert Sullivan (Region 6)

Remedial Project Manager
U.S. Environmental Protection Agency
1445 Ross Avenue, Ste. 1200
Dallas, TX 75202-2733
(214) 665-2755

Bob Sturdivant

RCRA Project Coordinator
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 665-6733

**III. State of Oklahoma Agency
Representatives**

Mr. Scott Thompson

Department of Environmental Quality
Waste Management Division
707 North Robinson Avenue
Oklahoma City, OK 73101-1677
(405) 702-5100

Mr. Michael Dean

Department of Environmental Quality
Public Information Division
707 North Robinson Avenue
Oklahoma City, OK 73101-1677
(405) 702-5100

Mr. Leslie Beitsch

Commissioner of Health
Oklahoma State Department of Health
1000 Northeast 10th
Oklahoma City, OK 73117-1212
(405) 271-5600

Duane Smith

Oklahoma Water Resource Board
3800 North Classen
Oklahoma City, OK 73118
(405) 530-8800

APPENDIX B

FEDERAL, STATE, AND LOCAL ELECTED OFFICIALS

L. Federal Elected Officials

Senator James M. Inhofe

Washington, D.C. Office
453 Russell Senate Office Building
Washington, D.C. 20510-3603
(202) 224-4721

District Office
1900 NW Expressway Suite 1210
Oklahoma City, Oklahoma 73118
(405) 608-4381

Senator Don Nickles

Washington, D.C. Office
133 Hart Senate Building
United States Senate
Washington, D.C. 20510
(202) 224-5754

District Office
100 North Broadway
Suite 1820
Oklahoma City, Oklahoma 73102
(405) 231-4941

Representative Steve Largent (District 1)*

Washington, D.C. Office
426 Cannon House Office Building
Washington, D.C. 20515-3601
(202) 225-2211

District Office
2424 E. 21st St., Suite 510
Tulsa, Oklahoma 74114
(918) 749-0014

Representative Tom A. Coburn (District 2)*

Washington, D.C. Office
429 Cannon House Office Building
Washington, D.C. 20515-3602
(202) 225-2701

District Office
215 State Street, Suite 815
Muskogee, Oklahoma 74401
(918) 687-2533

Representative Wes Watkins (District 3)*

Washington, D.C. Office
1401 Longworth House Office Building
Washington, D.C. 20515
(202) 225-4565

District Office
1903 N. Boomer
Stillwater, OK 74075
(405) 743-1400

Representative J. C. Watts Jr. (District 4)*

Washington, D.C. Office
1210 Longworth House Office Building
Washington, D.C. 20515
(202) 225-6165

District Office
2420 Springer Drive, Suite 120
Norman, Oklahoma 73069
(405) 329-6500

Representative Ernest J. Istook Jr. (District 5)*

Washington, D.C. Office
2404 Rayburn House Office Building
Washington, D.C. 20515
(202) 225-2132

District Office
120 N. Robinson, Ste. 100
Oklahoma City, Oklahoma 73102
(405) 225-2132

Representative Frank Lucas (District 6)*

Washington, D.C. Office
438 Cannon House Office Building
Washington D.C. 20515
(202) 225-5565

District Office
500 North Broadway, Suite 300
Oklahoma City, Oklahoma 73102
(405) 235-5311

II. State Elected Officials

Governor Brad Henry

State Capitol Building, Room 212
Oklahoma City, Oklahoma 73105
(405) 521-2342

State Senator Cliff Aldridge (Senate District 42)*

Oklahoma State Capitol
2300 N. Lincoln Blvd., Room 520
Oklahoma City, Oklahoma 73105
(405) 521-5584

State Senator Jim Reynolds (Senate District 43)*

Oklahoma State Capitol
2300 N. Lincoln Blvd., Room 534-B
Oklahoma City, Oklahoma 73105
(405) 521-5522

State Senator Mike Morgan (Senate District 48)*

Oklahoma State Capitol
2300 N. Lincoln Blvd., Room 519
Oklahoma City, Oklahoma 73105
(405) 521-5572

State Representative Kevin Calvey (House District 94)*

Oklahoma State Capitol
2300 N. Lincoln Blvd., Room 508
Oklahoma City, Oklahoma 73105
(405) 557-7370

District Office
4001 Kim Drive
Del City, Oklahoma 73115

(405) 677-1179

State Representative Bill Case (House District 95)*

Oklahoma State Capitol
2300 N. Lincoln Blvd., Room 539
Oklahoma City, Oklahoma 73105
(405) 557-7314

District Office
1319 Alviola Ave.
Midwest City, Oklahoma 73110
(405) 732-5795

State Representative Forrest Claunch (House District 101)*

Oklahoma State Capitol
2300 N. Lincoln Blvd. Room 544
Oklahoma City, Oklahoma 73105
(405) 557-7395

District Office
10320 Oak Park Drive
Midwest City, Oklahoma 73130
(405) 733-7054 (Home)
(405) 427-5473 (Office)

III. Local Elected and Appointed Officials

Oklahoma City

Interim Mayor Guy Liebmann

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2424

James D. Couch

City Manager
Municipal Building
200 North Walker, Suite 302
Oklahoma City, Oklahoma 73102
(405) 297-2345

Catherine O'Connor

James E. Thompson

Assistant City Managers
Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2345

City Treasurer

Finance Department
100 N. Walker, 4th Floor
Oklahoma City, Oklahoma 73102
(405) 297-2962

Planning Department

420 W. Main, 9th Floor
Oklahoma City, Oklahoma 73102
(405) 297-2576

Mike Randall

Director, Neighborhood Services
420 W. Main, 10th Floor
Oklahoma City, Oklahoma 73102
(405) 297-2972

Oklahoma City Council

Council Member Mick Cornett (Ward 1)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2404

Council Member Sam Bowman (Ward 2)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2402

Council Member Lawrence McAtee, Jr. (Ward 3)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2404

Council Member Brent Rinehart (Ward 4)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2402

Council Member Jerry Foshee (Ward 5)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2569

Council Member Ann Simank (Ward 6)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2402

Council Member Willa Johnson (Ward 7)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2569

Council Member Guy H. Liebmann (Ward 8)

Municipal Building
200 North Walker, 3rd Floor
Oklahoma City, Oklahoma 73102
(405) 297-2404

Midwest City

Mayor Eddie O. Reed

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1209

Charles Johnson

City Manager
P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-4

Guy Henson

Director, Development Services
P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1214

Midwest City Council

Council Member Jerry Maynard (Ward 1)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Council Member Turner Mann (Ward 2)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Council Member Ruth Cain (Ward 3)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Council Member Charles Joyner (Ward 4)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Council Member Michael Pung (Ward 5)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Council Member Richard Rice (Ward 6)

P O Box 10570
Midwest City, Oklahoma 73140
(405) 739-1208

Del City

Mayor Brian Linley

4832 Judy Drive
Del City, Oklahoma 73115
(405) 670-4651

City Manager

Mark Edwards
4517 SE 29th Street
Del City, Oklahoma 73115
(405) 671-2800

Office of Planning and Zoning

4517 SE 29th Street
Del City, Oklahoma 73115
(405) 671-2803

Del City Council

Council Member Dick Carter (Ward 1)

3911 Dentwood Terrace
Del City, Oklahoma 73143
(405) 672-2600

Council Member Larry O’Connel (Ward 2)

2320 Knox
Del City, OK 73115
(405) 677-0476

Council Member Ennis St. Clair (Ward 3)

2605 Mickey Road
Del City, Oklahoma 73115
(405) 677-7410

Council Member Frank Shelton (Ward 4)

3933 Meadowview
Del City, Oklahoma 73115
(405) 670-5486

Oklahoma County

Dr. Paul Dungan, Director

Oklahoma City-County Health Dept.
921 NE 23rd
Oklahoma City, Oklahoma 73105-7998
(405) 427-8651

Robert Jamison, Deputy Director

Oklahoma City-County Health Dept.
921 NE 23rd Street
Oklahoma City Oklahoma 73105-7998
(405) 427-8651

Oklahoma County Commissioners

Jim Roth (District 1)

320 Robert S. Kerr
Oklahoma City, Oklahoma 73105
(405) 270-0082

Jack Cornett (District 2)

320 Robert S. Kerr
Oklahoma City, Oklahoma 73105
(405) 270-0082

Stan Inman (District 3)

320 Robert S. Kerr
Oklahoma City, Oklahoma 73105
(405) 270-0082

Canadian County

Dr. Steve Ramsey, Ph.D. Administrative Director

Canadian County Health Department
100 South Rock Island
El Reno, Oklahoma 73036
(405) 262-0042

Cleveland County

Rod Huffman, Administrative Director

Cleveland County Health Department
250 12th Avenue North East
Norman, Oklahoma 73071
(405) 321-4048

Pottawatomie County

Rod Huffman, Administrative Director

Pottawatomie County Health Department
1904 Gordon Cooper Dr
Shawnee, Oklahoma 74801-8698
(405) 273-2157

Oklahoma City Chamber of Commerce

123 Park Avenue
Oklahoma City, Oklahoma 73102
(405) 297-8900

Midwest City Chamber of Commerce

301 N. Air Depot, Suite A
Midwest City, Oklahoma 73110
(405) 733-3801

Del City Chamber of Commerce

P.O. Box 15055
Del City, Oklahoma 73115
(405) 677-1910

South Oklahoma City Chamber of Commerce

Alba Weaver, Executive Director
701 Southwest 74th Street
Oklahoma City, Oklahoma 73139
(405) 634-1436

Garber-Wellington Association

c/o John Harrington
21 East Main
Oklahoma City, Oklahoma 73104
(405) 234-2264

Association of Central Oklahoma Governments

c/o Zach Taylor
21 East Main
Oklahoma City, Oklahoma 73104
(405) 234-2264

American Federation of Government Employees

4444 South Douglas Boulevard
Oklahoma City, Oklahoma 73150
(405) 733-3581

APPENDIX C
CITIZEN GROUPS

Oklahoma Toxics Campaign

c/o Earl Hatley
19257 S. 4403 Drive
Vinita, Oklahoma 74301
(918) 631-3049

Oklahoma Wildlife Federation

514 NW 28th Street
Oklahoma City, Oklahoma 73103
(405) 524-7009

Audubon Society of Central Oklahoma

P. O. Box 1863
Bethany, Oklahoma 73008-1863

Sierra Club Oklahoma Chapter

P.O. Box 60644
Oklahoma City, Oklahoma 73146-0644
oklahoma.chapter@sierraclub.org
(405) 721-5486

**League of Women Voters of Oklahoma
County**

500 North Broadway, Suite 125
Oklahoma City, Oklahoma 73102
(405) 232-8683

Oklahoma City Jaycees

P.O. Box 15159
Oklahoma City, Oklahoma 73155
(405) 236-3222

Neighborhood Services Organization, Inc.

4614 North MacArthur Blvd
Oklahoma City, Oklahoma 73122
(405) 440-9608

**American Association of Retired Persons
Senior Employment Service**

2200 North Classen Boulevard, Ste 920
Oklahoma City, Oklahoma 73106
(405) 525-8144

Del City Community Center

450 Southeast 15th
Del City, Oklahoma 73115
(405) 671-2867

Midwest City Community Center

100 N. Midwest Blvd.
Midwest City, Oklahoma 73110
(405) 739-1293

Midwest City Senior Citizens Center

8251 E. Reno Ave.
Midwest City, Oklahoma 73110
(405) 737-7611

MEDIA

L. Newspapers

The Daily Oklahoman

P.O. Box 25125
Oklahoma City, Oklahoma 73125
Telephone: (405) 475-3311
Managing Editor: Ed Kelly

The Midwest City Sun

P.O. Box 30338
Midwest City, Oklahoma 73140
Telephone: (405) 737-3050
Managing Editor: Robin Maxey

Mid-Del News, LLC

P. O. Box 778
Oklahoma City, Oklahoma 73101
(405) 869-9898
(405) 869-9891 Fax

The Journal Record

P.O. Box 26370
Oklahoma City, Oklahoma 73126
Telephone: (405) 278-2815
Editor: Mark Singletary

The Edmond Evening Sun

P.O. Box 2470
Edmond, Oklahoma 73083
Telephone: (405) 341-2121
Editor: Carol Hartzog
215 North Bell

The Shawnee News-Star

Shawnee, Oklahoma 74802
Telephone: (405) 273-4200
Editor: Mike McCormick

Moore American

P.O. Box 6739
Moore, Oklahoma 73153
631 North Broadway
Moore, Oklahoma 73160
(405) 794-5555
(405) 799-8046 Fax

Norman Transcript

P.O. Box Drawer 1058
Norman, Oklahoma 73070
215 East Comanche Street
Norman, Oklahoma 73069
(405) 321-1800
(405) 366-3520 Fax

Oklahoma Gazette

3701 North Shartel Avenue
Oklahoma City, Oklahoma 73118
P.O. Box 54649
Oklahoma City, Oklahoma 73154
(405) 528-6000
(405) 528-4600 Fax

Oklahoma Press Association

3601 North Lincoln Blvd.
Oklahoma City, Oklahoma 73105-5499
(405) 524-4421
(405) 524-2201 Fax
E-mail: sysop@okpress.com

Associated Press

525 Central Park Drive, Ste. 202
Oklahoma City, Oklahoma 73105
(405) 525-2121
(405) 524-7465 Fax

II. U.S. Air Force Newspapers

Tinker Take Off

3001 Staff Drive, 1AG78A
Tinker AFB, Oklahoma 73145-3010
(405) 739-5780

III. Television Stations

KFOR TV - Channel 4 (NBC Affiliate)

444 East Britton Road
Oklahoma City, Oklahoma 73114
(405) 478-6333
General Manager: Tim Morrissey

KOCO TV - Channel 5 (ABC Affiliate)

P.O. Box 14555
Oklahoma City, Oklahoma 73113
(405) 478-3000
General Manager: Brent Hensley

KWTV - Channel 9 (CBS Affiliate)

7401 N. Kelley
Oklahoma City, Oklahoma 73111
(405) 843-6731
Assignment Editor: Cordell Jordan

FOX News/WB 25

P.O. Box 14925
Oklahoma City, Oklahoma 73113
1228 East Wilshire Blvd.
Oklahoma City, Oklahoma 73111
(405) 843-2525
(405) 475-9120 Fax

OETA (OK Educational Television Authority) PBS/Local

Channel 13 – OETA
P.O. Box 14190
Oklahoma City, Oklahoma 73113
(405) 541-9226 Fax

Cox Communications (CABLE)

Channel 3
2312 Northwest 10th
Oklahoma City, Oklahoma 73107
(405) 600-8282

IV. Radio Stations

WKY (930 AM)

50 Penn Place
Oklahoma City, Oklahoma 73118
(405) 840-8338

KTOK (1000 AM)

50 Penn Place
Oklahoma City, Oklahoma 73118
(405) 840-5271

KOMA (1520 AM)

400 E. Britton Road
Oklahoma City, Oklahoma 73131
(450) 794-4000

KMGL (104.1 FM)

400 E. Britton Road
Oklahoma City, Oklahoma 73131
(405) 478-5104

KCSC (90.1 FM) National Public Radio

University of Central Oklahoma
100 North University
Edmond, Oklahoma 73034

KGFF-AM

2610 North Bryan
Shawnee, Oklahoma 74804
(405) 273-4390

KYIS (98.9 FM)

4045 NW 64th
Oklahoma City, Oklahoma 73111
(405) 848-0100

KGOU (106.3 FM/KROU 105.7 FM)

University of Oklahoma
Norman, Oklahoma 73019
(405) 325-3388

APPENDIX E**TINKER AFB COMMUNITY ADVISORY BOARD (CAB)**

A number of years ago, Tinker AFB identified the need for increased public participation in its restoration program and organized a Technical Review Committee. The TRC, which included representatives from Tinker, Region 6 EPA, the Oklahoma Department of Environmental Quality, and one community member, met quarterly to discuss Tinker's environmental cleanup progress and plans. The meetings were open to the public, but not well-attended.

Since that time, the Department of Defense has taken steps to increase public participation in its cleanup program. New DoD policy, which resulted from DoD's participation in the Federal Facilities Environmental Restoration Dialogue Committee, calls for the formation of Restoration Advisory Boards at installations.

The goal of RABs is to expand upon the Technical Review Committee concept. Advisory boards are a forum for exchange of information and partnership among citizens, the installation, EPA, and the state. Most importantly, they promote community awareness and create a forum for constructive community review and comment on environmental restoration actions associated with Tinker AFB. The RAB also facilitates open communication and disseminates information concerning the Installation Restoration Program at Tinker AFB.

Tinker's RAB was officially formed in February 1995, following a year-long selection process that began with a wide-spread campaign to publicize the new board. Applications were made available to all interested parties and were voluntarily distributed to more than 1,000 groups and/or individuals. To ensure fair selection, members were selected by an independent selection panel not affiliated with the base.

In April 1999, the RAB transformed into the Community Advisory Board (CAB) indicating the board would consider other environmental issues but keep environmental restoration as its main focus. The charter was amended to reflect the new name change. A CAB Speaker's Bureau was also formed in 1999 with members from the CAB and Tinker personnel communicating and disseminating information about the environmental restoration program and other environmental issues to the community.

Proactive public meetings are an integral part of TAFB's good-neighbor policy. The Community Advisory Board (CAB) is comprised of 16 leaders from the areas surrounding the base, along with representatives from TAFB, the Environmental Protection Agency and the Oklahoma Department of Environmental Quality. Community members represent groups such as the Association

of Central Oklahoma Governments, Oklahoma Toxics Campaign and Waste Management of Oklahoma. The CAB meetings are based on mutual respect, are held quarterly and thoroughly involve and consult stakeholders throughout the cleanup process. The ER staff provides briefings on a myriad of issues that arise such as odors from the Industrial Waste Treatment Plant or aircraft noise, fostering open channels of communication. The CAB technical committee reviews and provides input on all restoration documents.

Citizens interested in applying for CAB membership may contact Ms. Susie Beasley, Community Relations Subcommittee Chair, at (405) 732-4828 extension 24. Questions concerning the CAB may be directed to Mr. William Janacek, CAB Community Co-Chair, at (405) 739-1380.

CAB members, the groups they represent and their telephone numbers are:

- Mr. William J. Janacek, CAB Community Co-Chair, City of Midwest City, 405-739-1380
- Ms. Vicki L. Preacher, CAB Installation Co-Chair, Tinker AFB Environmental Management, 405-734-4111
- Mr. John Harrington, Association of Central Oklahoma Governments, 405-234-2264
- Ms. Kathy Lippert, Central Ok Area Business, 405-942-8355
- Ms. Betty Reaties, City of OKC Public Works Department – Storm Water Quality, 405-297-1772
- Mr. Earl Hatley, Oklahoma Toxics Campaign/University of Tulsa, 918-631-3049
- Ms. Susie Beasley, Midwest City Public Library, 405-732-4828 ext. 24
- Mr. Richard Reginald, Waste Management of Ok, 405-427-1112
- Ms. Nicole Mukes, City of Spencer, 405-771-3226
- Mr. Laird Hughes, Rose State College, 405-733-7364
- Mr. Jim DePuy, City of Del City, 405-671-2815
- Mr. Hal Cantwell, Oklahoma Department of Environmental Quality, 405-702-5139
- Mr. Robert Sullivan, U.S. Environmental Protection Agency, Region VI, 214-665-2755

APPENDIX F
PUBLIC MEETINGS

Public meetings regarding environmental activities at Tinker AFB are held in various locations throughout the communities surrounding the base. Because of their close proximity to the local populations, most meetings are held at:

Midwest City Public Library

8143 E. Reno
Midwest City, Ok 73110-7589
(405) 732-4828

Rose State College

Tom Steed Center
6420 S.E. 15th
Midwest City, Ok 73110
(405) 733-7392

Midwest City Community Center

100 N. Midwest Blvd.
Midwest City, Ok 73110
(405) 739-1293

APPENDIX G**GLOSSARY OF ENVIRONMENTAL TERMS**

Administrative Record. The Administrative Record consists of all documents which have a legal bearing on the remedial action. It is required for every response action, is used for judicial review, and forms the basis for the selection of response actions at third-party sites.

Agency for Toxic Substances and Disease Registry (ATSDR). A branch of the Public Health Service within the U.S. Department of Health and Human Services. Based in Atlanta, Ga., this agency conducts health assessments of all facilities/sites listed on the National Priority List (NPL).

Air Stripping. A treatment system that removes, or “strips” volatile organic compounds (VOCs) from contaminated groundwater or surface water by forcing an airstream through the water and causing the compounds to evaporate.

Applicable or Relevant and Appropriate Requirements (ARAR). These are federal and state laws which must be considered in choosing a remedial action.

Aquifer. An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

Area of Concern (AOC). Any discernable unit or area which may have received solid or hazardous waste or waste containing hazardous constituents at any time.

BTEX. Benzene, toluene, ethylbenzene and xylene. These organic compounds are common constituents of vehicle fuels.

Carcinogen. A substance that can cause cancer.

Carbon Adsorption. A treatment system where contaminants are removed from groundwater or surface water when the water is forced through tanks containing activated carbon.

Categorical Exclusion (CATEX). A class of actions that either individually or cumulatively would not have a significant effect on the human environment and therefore would not require preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA).

Community Advisory Board (CAB). A board comprised of community members functioning as an advisory body that facilitates the open exchange of information between Air Force installations and local residents concerning restoration activities.

Community Relations Plan. A plan required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at all National Priorities List (NPL) sites. The plan is a guide to assist in the implementation of public involvement activities as well as a mechanism for informing the community about cleanup progress under the base's Installation Restoration Program (IRP), as well as responding to community concerns.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This federal law (PL96-510), passed in 1980, provides a series of programs to address the cleanup of hazardous waste disposal sites and areas where spills have occurred. CERCLA is codified in 42 USC 9601 et. seq.; and 26 USC 4611, 4612, 4661, 4662, 4671, and 4672. It has been modified and amended several times, most significantly in 1986 by the Superfund Amendments and Reauthorization Act, known as SARA.

Confirmation Study. In former Installation Restoration Program (IRP) terminology, the confirmation study took place during the Phase II investigation, which verifies the existence or absence of contamination at a site. It is comparable to the Remedial Investigation in current IRP terminology.

Consent Decree (CD). A legal document, approved and issued by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) whereby PRPs will perform all or part of a Superfund site cleanup. The consent decree describes actions that PRPs must perform and is subject to a public comment period.

Cost-Effective Alternative. The cleanup alternative selected for a site on the National Priorities List based on technical feasibility, permanence, reliability, and cost. The Air Force and EPA are not required to choose the least expensive alternative. If there are several cleanup alternatives available that deal effectively with the problems at a site, the Air Force must choose, and EPA concur on the choice of a remedy on the basis of permanence, reliability and cost.

Contaminant Standards. Limits on concentrations of contaminants in water, oil, sediments, or air as established by federal, state or local law or regulation.

Control Measures. Management methods and technologies that are applied for control and cleanup of hazardous waste sites.

Cost Recovery. A legal process whereby potentially responsible parties (PRPs) can be required to pay back EPA for money spent during any cleanup actions.

Decision Document (DD). A means of recording significant decisions in the Installation Restoration Program. Actions which merit a DD include: selecting a remedial action, closing out a site, and reactivating a site.

Defense Environmental Restoration Account (DERA). The Department of Defense funding program for the Installation Restoration Program.

Defense Environmental Restoration Program (DERP). A Department of Defense program, mandated in the Superfund Amendments and Reauthorization Act (SARA) Section 211, which includes the Installation Restoration Program as a component.

Detailed Alternatives. Potential, comprehensive solutions to site problems, composed of one or more control measures, which are developed and evaluated in detail in the Remedial Action Plan.

Effluent. Wastewater -- treated or untreated -- that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

Emergency Response. A control measure or combination of control measures implemented to prevent or mitigate an immediate and substantial threat to public welfare posed by a hazardous waste site.

Endangerment Assessment. A study conducted as a supplement to a remedial investigation to determine the nature and extent of contamination at a site and the risks posed to public health and/or the environment. An Endangerment Assessment is conducted when legal action is pending to require potentially responsible parties (PRPs) to perform or pay for the site cleanup.

Enforcement Action. EPA's efforts, through legal action if necessary, to force potentially responsible parties (PRPs) to perform or pay for a Superfund site cleanup.

Enforcement Decision Document (EDD). A public document that explains EPA's selection of a cleanup alternative at a third-party site through an EPA enforcement action. Similar to a Record of Decision (ROD).

Environmental Assessment (EA). A concise public document that serves to: (1) briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI), (2) aid an agency's compliance

with the National Environmental Policy Act when no EIS is necessary, and (3) facilitate preparation of an EIS when one is necessary.

Environmental Impact Analysis Process (EIAP). A process to determine the potential environmental impacts of proposed Air Force actions and alternatives and use of these analyses in making decisions or recommendations on whether to proceed and how to proceed with those actions. The EIAP is conducted in accordance with AF Regulation 19-2, the National Environmental Policy Act of 1969 and 40 CFR et. seq., the President's Council on Environmental Quality regulations.

Environmental Impact Statement (EIS). A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and lists alternative actions.

Exposure Assessment. A determination of human exposure to, and the resulting effects of, contaminants on public health and welfare.

Feasibility Study. A description and analysis of the potential cleanup alternatives for a site or alternatives for a site on the National Priorities List. This restoration phase identifies the means for development, evaluation, selection, and description of remedial action alternatives. It usually starts as soon as the Remedial Investigation is underway; together, they are commonly referred to as the RI/FS.

Finding of No Significant Impact (FONSI). A document prepared by a federal agency that states why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. The FONSI is based on the results of an Environmental Assessment.

Groundwater. Water found beneath the Earth's surface that fills pore spaces in the soil. In aquifers, groundwater occurs in sufficient quantities that it can be used for drinking water, irrigation and other purposes.

Hazard Ranking System (HRS). The principal screening tool used by EPA to evaluate risks to public health and the environment associated with abandoned or uncontrolled hazardous waste sites. The HRS calculates a score based on the potential of hazardous substances spreading from a site through the air, surface water, or groundwater and on other factors such as nearby population.

This score is the primary factor in deciding if a site should be on the National Priorities List and, if so, what ranking it should have compared to other sites on the list.

Hazardous Substance. Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Hazardous Waste. A solid waste, or combination of solid wastes, that can pose a substantial or potential hazard to human health or the environment when improperly managed. It possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Heavy Metals. Metallic elements with high atomic weights such as mercury, chromium, cadmium, arsenic, and lead.

Herbicide. A chemical pesticide designed to control or destroy plants, weeds, or grasses.

Hydrology. Science dealing with the properties, movement, and effects of water on the Earth's surface, in the soil and rocks below, and in the atmosphere.

Incineration. Burning of certain types of solid, liquid, or gaseous materials under controlled conditions to destroy hazardous waste.

Influent. Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.

Information Repository. A file containing technical reports, information and reference documents regarding cleanup activities under the Installation Restoration Program and/or Superfund. The repository is usually located in a public building such as a school, public library, or city hall that is conveniently located for local residents.

Installation Restoration Program (IRP). A Department of Defense program to identify the location of former hazardous waste disposal sites, to determine if any contamination releases have occurred, and to minimize the associated hazards to public health.

Interim (Permit) Status. Period during which treatment, storage and disposal facilities coming under Resource Conservation and Recovery Act (RCRA) are temporarily permitted to operate while awaiting denial or issuance of a permanent permit. Permits issued under these circumstances are usually called Part A or Part B permits.

Leachate. A contaminated liquid resulting when water percolates, or trickles, through waste materials and collects chemical components of those wastes. Leaching may occur at landfills and may result in hazardous substances entering soil, surface water, or groundwater.

Leachate Collection System. A system that gathers leachate and pumps it to the surface for treatment.

Long-Term Monitoring (LTM). A program of water, soil or sediment analysis intended to track the migration (or non-migration) of contaminants. Monitoring is implemented without concurrent implementation of a remedial action.

Material Safety Data Sheets (MSDS). A compilation of information required under the OSHA Communication Standard on the identity of hazardous chemicals, health, and physical hazards, exposure limits, and precautions. Section 311 of SARA requires facilities to submit MSDSs under certain circumstances.

Maximum Contaminant Level (MCL). The maximum permissible level of a contaminant in groundwater and soil. MCLs are enforceable standards.

Mitigation. Measures taken to reduce adverse impacts on the environment.

Monitoring. Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things.

Monitoring Wells. Wells drilled at specific locations on or off a hazardous waste site where groundwater can be sampled at selected depths. Analyses to determine such things as the depth to groundwater and the types and amounts of contaminants present can then be performed.

National Ambient Air Quality Standards (NAAQS). Air quality standards established by EPA that apply to outside air.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Also known as NESHAPs, these emissions standards set by EPA for an air pollutant not covered by NAAQS that may cause an increase in deaths or serious, irreversible, or incapacitating illness.

National Oil and Hazardous Substances Contingency Plan (NCP) 40 CFR 300. The federal regulation established under the Clean Water Act and expanded under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which provides for the

coordinated and effective response to discharges of oil and to releases of hazardous substances, pollutants and contaminants.

National Pollutant Discharge Elimination System (NPDES). A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or (where delegated) a tribal government on an Indian reservation.

National Priorities List (NPL). A compiled list of the most serious hazardous waste sites identified for possible long-term remedial response. The list is based primarily on the score a site receives on the Hazard Ranking System (HRS). The EPA is required to update the NPL at least once a year.

No Further Action. This term has been replaced by the term: “site close-out.” Site close-out may occur during several different stages of the cleanup process, depending upon the particular site.

On-Scene Coordinator. The predesignated EPA, Coast Guard, or Department of Defense official who coordinates and directs Superfund removal actions or Clean Water Act oil- or hazardous-spill corrective actions.

Operable Unit (OU). A portion of a site requiring further specialized investigation. A site can be made up of several discreet operable units. Typical restoration activities at an operable unit would be removing drums and tanks from the surface of a site.

Organics. Chemicals containing carbon, with the exception of carbon dioxide and carbonates such as calcium carbonate.

Outfall. The location where an effluent is discharged into receiving waters.

Particulates. Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog, found in air or emissions.

Parts per Billion (ppb), or Parts per Million (ppm). Units commonly used to express concentrations of contaminants. For instance, 1 ounce of trichloroethylene (TCE) in 1 million ounces of water is 1 ppm; 1 ounce of TCE in 1 billion ounces of water is 1 ppb.

Percolation. The movement of water downward and radially through the subsurface soil layers, usually continuing downward to the groundwater.

Plume. A visible or measurable discharge of a contaminant from a given point of origin. It can be visible in the air as, for instance, a plume of smoke.

Potentially Responsible Party (PRP). Owners, operators, transporters, or generators of waste potentially responsible for, or contributing to, the contamination at a site.

Preferred Alternative. The detailed cleanup alternative that is selected by a Major Command for review and concurrence by the Air Force Installation Restoration Management committee. After review by Air Force, regulatory agencies and the public, the preferred alternative becomes the Remedial Action outlined in the Remedial Action Plan (RAP).

Preliminary Assessment. Part of the Installation Restoration Program (IRP), this process collects and reviews available information about a known or suspected hazardous waste site or release. The information is used to determine if the IRP site requires further study.

Proposed Plan. A document used for recommendation of the restoration alternative selected in the final Feasibility Study as part of the Installation Restoration Program.

Public Affairs Office. Installation personnel who are responsible for maintaining proper communication channels with the public regarding site restoration activities.

Public Comment Period. A designated time period (usually coinciding with the release of the Remedial Investigation/Feasibility Study draft report or revision of the Record of Decision) when comments from citizens about environmental activities are invited.

Public Meetings. Meetings organized by the agency that are open to the public. Experts are available to present information and answer questions. Citizens are encouraged to ask questions and offer comments.

Public Notices. Advertisements published in major local newspapers, broadcast via local radio stations, or mailed to community members to announce Air Force decisions, major project milestones, public meetings, or to solicit public comment on Air Force actions.

Record of Decision (ROD). A public document that explains which cleanup alternative(s) will be used at National Priorities List sites. The ROD is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Remedial Action. The actual construction or implementation phase that follows the remedial design of the selected cleanup alternative at a site.

Remedial Action Plan. A report documenting the process of selecting and describing remedial actions; also the report remedial action selected.

Remedial Design. An engineering phase that follows the Record of Decision (ROD) when technical drawings and specifications are developed for remedial action at a site.

Remedial Investigation. The Installation Restoration Program (IRP) or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) related process to determine the nature and extent of contamination at a site. This phase of the IRP emphasizes data collection and site characterization of hazardous waste sites in an interactive fashion with the Feasibility Study phase.

Remedial Investigation/Feasibility Study. The term indicating the iterative/interactive combination of the two related Installation Restoration Program studies.

Remedial Response. A long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious, but not an immediate threat to public health and/or the environment.

Removal Action. Short-term immediate actions taken to address releases or threatened releases of hazardous substances that require expedited response.

Response Action. A CERCLA-authorized action involving either a short-term removal action or a long-term remedial response that may include but is not limited to: removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment, or destruction, containing the waste safely on site, destroying or treating the waste on site, and identifying and removing the source of groundwater contamination and halting further migration of contaminants.

Responsiveness Summary. A required summary of oral and/or written public comments received by the installation during a comment period concerning key Installation Restoration Program documents, combined with the Air Force's responses to those comments.

Resource Conservation and Recovery Act (RCRA). The federal law that established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires

safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent new, uncontrolled hazardous waste sites.

Risk Assessment. An evaluation to assess conditions at a site and determine the risk posed to public health and/or the environment.

Site Close-out. Site close-out may occur during several different stages of the cleanup process, depending upon the particular site and its circumstances. Regardless of the stage during which close-out occurs, the process must be accompanied by proper documentation.

Site Inspection. A technical phase that follows a Preliminary Assessment designed to collect more information on a hazardous waste site. The information is used to score the site with the Hazard Ranking System to determine whether a response action is needed.

Site Monitoring Plan. The procedures and requirements by which a long-term or postclosure monitoring program is implemented.

Solid Waste Management Unit (SWMU). Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

Solvents. Cleaning agents and degreasing compounds. Some chemical solvents are suspected of being carcinogenic.

Standard. Any limits established by regulatory agencies on quantities, rate and concentrations of chemical, physical, biological and other constituents.

Statement of Work. Specifies to the contractor, efforts needed to conduct and document various stages of the Installation Restoration Program and to describe the selected site control measures.

Superfund Amendments and Reauthorization Act (SARA); PL 99-499. Modifications to the Comprehensive Environmental Response, Compensation and Liability Act enacted on October 17, 1986.

Superfund. The common name used to denote the trust fund for site restoration established in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or CERCLA itself.

Surface Water. Bodies of water that are above ground, such as rivers, streams or lakes.

Title I, Title II, or Title III. Title I, II, or III of the Superfund Amendments and Reauthorization Act (SARA).

Treatment, Storage or Disposal Facility (TSD). Site where a hazardous substance is treated, stored, or disposed. TSD facilities are regulated by EPA and states under the Resource Conservation and Recovery Act (RCRA).

Trichloroethylene (TCE). A solvent commonly used to wash or degrease industrial equipment. Breaks down into vinyl chloride given appropriate site conditions.

Underground Storage Tank (UST). A tank located all or partially underground that is designed to hold gasoline or other petroleum products or chemical solutions.

Volatile Organic Compound (VOC). An organic (carbon-containing) compound that evaporates (volatilizes) readily at room temperature.

Wastewater. The spent or used water from individual homes, a community, a farm, or an industry that contains dissolved or suspended matter.

APPENDIX H

GLOSSARY OF ENVIRONMENTAL ACRONYMS

AOC- Area of Concern

AR - Administrative Record.

ARAR - Applicable or Relevant and Appropriate Requirements

ATSDR - Agency for Toxic Substances and Disease Registry

BTEX - Benzene, Toluene, Ethylbenzene and Xylene

CAB - Community Advisory Board

CATEX - Categorical Exclusion

CD - Consent Decree

CRP - Community Relations Plan

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

DD - Decision Document

DERA - Defense Environmental Restoration Account

DERP - Defense Environmental Restoration Program

EA - Environmental Assessment

EDD - Enforcement Decision Document

EIAP - Environmental Impact Analysis Process

EIS - Environmental Impact Statement

FONSI - Finding of No Significant Impact

FS - Feasibility Study

HRS - Hazard Ranking System

IRP - Installation Restoration Program

LTM - Long-Term Monitoring

MCL - Maximum Contaminant Level

MSDS - Material Safety Data Sheets

NAAQS - National Ambient Air Quality Standards

NESHAPs - National Emissions Standards for Hazardous Air Pollutants

NPDES - National Pollutant Discharge Elimination System

NPL - National Priorities List

OU - Operable Unit

PPB - Parts Per Billion

PPM - Parts per Million

PRP - Potentially Responsible Party

RA - Remedial Action.

RCRA - Resource Conservation and Recovery Act

RI - Remedial Investigation

ROD - Record of Decision

SARA - Superfund Amendments and Reauthorization Act

SOW - Statement of Work

SWMU - Solid Waste Management Unit

TCE - Trichloroethylene

TSD - Treatment, Storage or Disposal Facility (TSD).

UST - Underground Storage Tank

VOC - Volatile Organic Compound