Installation Restoration Program
Zones/Sites

Zone	Site	Description	Medium Impacted	Remediation System	Status
1	B-1	Former Salvage Lumber Burn Area in the SW portion of the Base	Soil	Remedial investigation did not detect any significant soil contamination	Recommended for site closure
1	CS-3	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found moderate contamination of soil and groundwater	The Feasibility Study (FS) for soils is being revised based on TNRCC comments. The feasibility study for groundwater was completed. Site is being resampled and analyzed to determine cleanup alternatives for the groundwater
1	D-1	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found contamination of soil and groundwater	Feasibility Study (FS) for soil is being revised based on TNRCC comments. Additional soil samples are planned
1	D-2	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Groundwater recovery system installed in 1993 to transport contaminated groundwater to the pretreatment facilities at the wastewater treatment plant	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on TNRCC comments. Additional soil samples are planned
1	D-3	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found low contamination levels in the soil and groundwater	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on TNRCC comments. Additional soil samples are planned
1	D-4	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Groundwater recovery system installed in 1993 to transport contaminated groundwater to the pretreatment facilities at the wastewater treatment plant	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on TNRCC comments. Additional soil samples are planned
1	D-5	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Groundwater recovery system installed in 1993 to transport contaminated groundwater to the pretreatment facilities at the wastewater treatment plant	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on TNRCC comments. Additional soil samples are planned
1	D-6	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found low levels of soil and groundwater contamination	Feasibility Study (FS) for the site was submitted to the TNRCC for approval
1	D-7	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found contamination in soil and groundwater	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on comments by the TNRCC. Additional soil samples are planned
1	D-8	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found low levels of soil and groundwater contamination.	Recommended for site closure
1	D-9	Former Landfill Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found low to moderate levels of soil and groundwater contamination	Feasibility Study (FS) for groundwater was completed. The FS for soils is being revised based on comments by the TNRCC. Additional soil samples are planned
1	E-2	Former Oil Evaporation Pit in the SW portion of the Base	Soil / Groundwater	Remedial investigation found contamination as part of Site D-7	Recommended for site closure
1	FC-1	Former Fire Control Training Area in the SW portion of the Base	Soil / Groundwater	Remedial investigation found contamination as part of Site D-7	Recommended for site closure
1	RD-1	Former Low-Level Radioactive Disposal Site in the SW portion of the Base	Soil / Groundwater	Remediated as single site	A contract has been awarded to remove the low-level radioactive material, conduct sampling and provide a closure report. The site will be closed through the Radioactive Isotope Commission (RIC)
1	RD-2	Former Low-Level Radioactive Disposal Site in the SW portion of the Base	Soil / Groundwater	Remediated as single site	The site will be closed through the Radioactive Isotope Commission (RIC)
1	SA-1	Former Sludge Spreading Area in the SW portion of the Base	Soil	Soils will be remediated as single site	This site is being investigated to determine the extent of contamination
1	Zone 1 GW	Groundwater Zone 1 in the SW portion of the Base	Groundwater	Zone is divided into separate IRP sites and being remediated separately	Alternative remediation studies being conducted
1	XU051	Former rifle range on the Kelly Golf Course in the SW portion of the Base	Soil	Preliminary assessment completed Sep 97	Site will be investigated under the DoD Range Rule. Investigation will be conducted at the site to determine extent of contamination
1	XU052	Former Bombing Target in the NW portion of the Base	Soil	Preliminary assessment completed Sep 97	Site will be investigated under the DoD Range Rule. Investigation will be conducted at the site to determine extent of contamination
2	CS-2	Combined Site in the IWTP area in southern part of Base	Soil	Interim action to extract and treat contaminated groundwater began in 1994 and is operational	Site is recommended for closure based on low contamination levels of soil
2	E-1	Chemical evaporation pit in southern part of Base	Soil / Groundwater	Interim action to extract and treat contaminated groundwater began in 1994 and is operational	Pit areas are being reinvestigated, as part of a RCRA Facility Investigation, to determine nature and extent of contamination. A Corrective Measures Study will follow
2	E-3	Chemical Evaporation Pit in southern part of Base	Soil / Groundwater	Interim system to extract and treat contaminated groundwater was installed in 1994	Soil remediation is planned. Final plans to clean up residual contaminated groundwater are planned
2	S-3	Maintenance Storage Area in southern part of Base	Soil	Remedial investigation found moderate levels of contamination, but below health risk	Site is being investigated further to determine site closure options
2	FC-2	Fire Control Training Area in southern part of Base	Soil	Administrative Controls, Monitoring, Fencing, Soil Capping, Excavation and Off Site Disposal, Soil Vapor Extraction/Bioventing	Site is being remediated
2	S-9	Former Aqua-Fuels System (UST) and former Sludge Spreading Area	Soil	Administrative Controls, Monitoring, Fencing, Soil Capping, Excavation, Off Site Disposal	Site remediation is planned
2	SA-2	IWTP Sludge Lagoon in southern part of Base	Soil	Administrative Controls, Monitoring, Fencing, Excavation, Soil Vapor Extraction/ Bioventing, Clean Backfill	RCRA Closure Plan has been completed. Site Closure activities will continue after approval of Closure Plan
2	SA-4	IWTP Sludge Spreading Area in southern part of Base	Soil	Remedial investigation found moderate levels of soil contamination but below health risk	Recommended for site closure
2	SD-1	IWTP sludge Drying Beds in southern part of Base	Soil	Administrative Controls, Monitoring, Fencing, Excavation, Soil Vapor Extraction/ Bioventing, Clean Backfill	RCRA Closure Plan has been completed. Site Closure activities will continue after approval of Closure Plan
2	S4-A	Hazardous Waste Storage Area in southern part of Base	Soil	Remedial investigation found very low levels of soil contamination	Recommended for site closure
2	D-10	Waste Tar Pit/Landfill in southern part of Base	Soil	Contaminated soil will be removed by bulk excavation and disposed at an off-site location	Site will be remediated by removing contaminated soil
2	SA-3	IWTP Sludge Spreading Area in southern part of Base	Soil	Remedial investigation found the source of contamination originated from the nearby evaporation pit Site E-3. Site cleanup will be under cleanup actions at Site E-3	Recommended for site closure
2	SD-2	IWTP Old Sludge Drying Beds in southern part of Base	Soil	Remedial investigation found moderate levels of soil contamination but below health risk	Recommended for site closure
2	Former IWTP	Former IWTP in southern part of Base	Soil	Remedial investigation found low levels of soil contamination	Recommended for site closure
2	OT-1	Liquid Waste Incinerator in southern part of Base	Soil	Administrative Controls, Monitoring, Fencing, Soil Capping, Excavation, Off Site Disposal	Site remediation is planned
2	Zone 2 GW	Groundwater Zone 2 in southern part of Base	Groundwater	Zone is divided into separate IRP sites and being remediated separately	Alternative remediation studies being conducted
3	OT-2	Former metal plating shops 258, 259	Soil	Contamination associated with the former IWCS in the area was found at low concentrations	The IRP site has been recommended for closure. However, a solid waste management unit has been established for waste degreaser pits located at the site. An interim stabilization measure will be constructed to contain groundwater contamination. The SWMU is currently being investigated to determine nature and extent of the contamination
3	S-4	Fuel Spill Area in the SE part of the Base	Soil	Administrative Controls, Monitoring, In Situ Soil Treatment (Bioventing),	Cleanup options are being evaluated for the site
3	S-8	Former Automated Engine Parts Cleaning Facility & associated USTs in the eastern part of the Base	Soil	Administrative Controls, Monitoring, Capping, In Situ Soil Treatment (Bioventing)	Cleanup options are being evaluated for the site
3	IWCS	Industrial Wastewater Collection System (IWCS) in the industrial parts of the Base	Soil	The system will be abandoned in place or removed depending on conditions encountered	Remediation will be determined on the conditions of property transfer
3	S-6	Groundwater contaminated site in SE part of the Base	Soil	Remedial investigation found low levels of soil contamination but below health risk	Recommended for site closure
3	UST-182	Underground storage tank in the eastern part of the Base	Soil	Remediated as single site	Recommended for site closure
3	UST-308	Underground storage tank in the eastern part of the Base	Soil	Remediated as single site	Recommended for site closure
3	UST-038	Underground storage tank	Soil	Remediated as single site	Recommended for site closure
3	UST-386	Underground storage tank in the south central part of the Base	Soil	Remediated as single site	Recommended for site closure
3	Zone 3 GW	Groundwater Zone 3	Groundwater	Administrative Controls, Groundwater Monitoring, Extraction Wells, Ex Situ Ultraviolet Oxidation, Ex Situ Precipitation. Interim systems have been installed along the base boundary and in off base areas	Groundwater is being remediated at site-specific areas
4	OT-51 (IWCS)	Former Industrial Waste Collection System in the NW part of E. Kelly	Soil / Groundwater	The lines of the system will be abandoned in place	Closed under IWCS Closure (Base-wide)
4	OT-52 (Zone 4 GW)	Groundwater Zone 4 (East Kelly)	Groundwater	Remedial Investigation Reports submitted to regulators for OU-1 in June 1998	RI for OU-2 (off-base) ongoing
4	S-2	DRMO Storage Area consists of two storage yards (Yards N and 13) in the northern part of E. Kelly	Soil	Closure requested for Yard N	FS planned for Yard 13
4	S-7	Herbicide Storage Yard in the SW part of E. Kelly	Soil	Soil removal	Closure approved with exceptions
5	S-1	Former waste oil storage facility Old DRMO Storage Area in the northern part of the Base	Soil / Groundwater	Remediated as single site	Focus Feasibility Study (FFS) completed. IRA to include soil excavation/soil vapor extraction. Contaminated groundwater cleanup action began in 1995 with an interim collection and treatment system
5	S-5	Former aqua-fuel system in the central part of the Base (10 USTs)	Soil / Groundwater	Remediated as single site	Tanks removed and contaminated soil excavated. Soil was treated on Base by thermal desorption. Site has been closed by TNRCC
5	S-10	Spill Site in the central part of the Base	Soil / Groundwater	Remediated as single site	Site will be addressed in Zone 5 corrective measure study (CMS)
5	IS-1	Former solvent still, contaminated soil in the northern part of the Base	Soil / Groundwater	Remediated as single site	Site (soils) closed by TNRCC
5	OT-50 (Zone 5 GW)	Groundwater Zone 5	Groundwater	Remediated as single site	Groundwater is being investigated and remediated at site-specific areas

Fuel Spill Sites (Non-IRP Sites)

Zone	Site ID Alias	Site Description	Medium Impacted	Remediation System	Status
5	1100 Area	Underground fuel line at tank farm in the NW part of Base along flightline spilled fuel.	Groundwater	Soil vapor extraction system installed in 1991. Groundwater recovery system included an air stripper was installed in 1992. A hot air injection system to remediate the groundwater contamination was installed in 1993.	Site is being addressed as part of zones FS
5	1500 Area	Underground fuel line from the hydrant fuel system in the northern part of the Base spilled fuel.	Soil / Groundwater	Bioventing system installed in 1994.	Site is being remediated.
5	1501 Area	UST on the south side of the Auto Hobby Shop	Soil	Contaminated soil removed and replaced with clean soil during removal of UST	Closure pending

Kelly Air Force Base

Installation Restoration Program

SAN ANTONIO AIR LOGISTICS CENTER — PARTNERS WITH THE ENVIRONMENT — ENVIRONMENTAL MANAGEMENT

Zone, Sites Fact Sheet

October 1998

The purpose of this fact sheet is to describe contaminants found at sites highlighted during the Oct. 28 Restoration Advisory Board meeting's information fair/poster session. The following information contains a brief description of each site, a list of contaminants found at each site and the treatment strategy for each site that Kelly AFB is either considering or has undertaken.

Zone 1 ***is located on the west side of the base, north of Military Drive. The golf course covers much of the area. All groundwater within the zone is considered an Installation Restoration Program (IRP) site. Leon Creek flows through the zone from north to south. Contaminants include organic and inorganic compounds. Soil sites in the zone are B-1, CS-3, D-1, D-2, D-3, D-4, D5, D-6, D-7, D-8, D-9, E-2, FC-1, RD-1, RD-2 and SA-1. These include 9 landfills, low level radioactive waste sites, and waste pits and burn areas.***

Zone 2 ***includes a small portion of the base that extends south of Military Drive. Leon Creek forms the western and southern boundaries of the zone. Contaminants found in Zone 2 include both organic and inorganic compounds.***

Site E-3 - The E-3 chemical evaporation pit is located south of Military Drive and east of the jet engine test cells. It was used from 1966 to 1982 to evaporate solvents and to dispose of sludges and residue from tank-cleaning operations. The bottom of the pit was lined with clay. In 1985, all liquids, oil, sludge, the clay liner and visibly contaminated soil were removed; however, subsurface soil and groundwater contamination remain.
Contaminated groundwater extends away from the site toward the southeast boundary of the base. Surface soils do not pose a health risk; however, potential domestic use of the shallow groundwater poses an unacceptable health risk as defined by the U.S. Environmental Protection Agency.
An interim action to extract and treat the contaminated groundwater began in 1994. Final plans to clean up contaminated groundwater include administrative controls to restrict use of the groundwater, extraction wells to collect the contaminated groundwater, ultraviolet oxidation to remove contaminants from the groundwater and bioremediation to clean up residual contamination. Plans to clean up contaminated soil include bioventing and soil vapor extraction.

Zone 3 ***includes most of the industrial areas on the southeast side of Kelly AFB. The area is bounded on the east by the Union Pacific rail yards. Contaminants found in Zone 3 include solvents, inorganics and petroleum products from fuel spills and leaking industrial waste lines. All groundwater within the zone constitutes an Installation Restoration Program site. Other sites in the zone are MP, S-4, S-8, and the Industrial Waste Collection System.***

Site OT-2 (commonly referred to as site MP) - The MP old metal plating shops (Bldgs. 258 and 259) were on what is now a parking lot located just south of Bldg. 171 on the southeast side of the base. Bldg. 258 was a nickel plating shop, and Bldg. 259 was a chrome-plating facility for aircraft engines. Soil contaminants at site MP include solvents and degreasers. Prior to the installation of the new recovery system (March 1998), solvent contaminants were slowly moving off the base in a shallow groundwater aquifer about 25 feet below the surface (Additional information regarding the shallow groundwater aquifer can be found in the Shallow Groundwater Aquifer Fact Sheet).

Plans to clean up contaminated groundwater include administrative controls to restrict use of the groundwater, extraction wells to remove contaminated groundwater, treatment of the groundwater using ultraviolet oxidation for organic contaminants, and allow precipitation of inorganic contaminants. A slurry well will be installed in early 1999 and will completely enclose soil and groundwater at the B/250 and 259 areas. Investigations and monitoring at the site are continuing.

Site S-4 - The S-4 fuel spill area is located in the east-central portion of the base near Bldg. 365. The off-base portion of the site is located within the Union Pacific rail yard.

A recovery project, consisting of an extensive network of recovery wells and pumps, began removing floating fuel from the shallow groundwater within the rail yard in December 1989. The results of an extensive health and safety risk assessment concluded that residents are not at risk from the nearby underground jet fuel plume.
Final plans to clean up contaminated groundwater include administrative controls to restrict use of the groundwater, extraction wells and collection trenches to remove contaminated groundwater, treatment of the groundwater using ultraviolet oxidation for organic contaminants, and allowing precipitation of inorganic contaminants.

Soil contamination at S-4 is primarily the result of past leaks from industrial waste collection lines and jet fueling systems. Chlorinated solvent contamination has resulted from leaks in underground industrial waste collection lines that transport waste from most of the industrial complexes to the Environmental Process Control Facility. Organic contaminants present at S-4 include benzene, toluene, ethylbenzene, xylene, ketones, halogenated aliphatics, and polynuclear aromatic hydrocarbons.

Plans to clean up contaminated soil at S-4 include administrative controls, monitoring and bioventing.

Zone 4 ***is located on East Kelly. Contaminants include solvents and petroleum products. Sites in the zone include OT-51, OT-52, Site S-2 and Site S-7. Additional information concerning Zone 4 can be found on the Zone 4 displays.***

Zone 5 ***includes all areas of the base not part of Zones 1 through 4: all areas adjacent to the flightline and the Kelly Warehouse areas. Contaminants include solvents and petroleum products. All groundwater within the zone constitutes an Installation Restoration Program site. Other sites in the zone are S-1, S-5, S-10 and IS-1; Non-Installation Restoration Program sites include the 1100 area fuel spill, 1500 area fuel spill and the 1501 spill site.***

Site S-1 - The old Defense Property Disposal Office storage area is on the north base boundary, southwest of the intersection of Growdon Drive and Barney Ave. The site was used from the early 1960s to 1973 for storing wastes that would later be taken off base and reclaimed. Storage tanks often overflowed, and spilled during loading and unloading. Waste types include mixed solvents, carbon cleaning compounds, and petroleum products. In 1995, the operation of an interim cleanup action was initiated. This cleanup action was designed to collect and treat contaminated groundwater.

ZONE MAP