



## CARSWELL/PLANT 4 RESTORATION ADVISORY BOARD

Fact Sheet #8  
May 11, 2000

---

### **NAS FORT WORTH JOINT RESERVE BASE INSTALLATION RESTORATION PROGRAM**

This is the eighth in a series of fact sheets focusing on the Installation Restoration Program (IRP) at the Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB). The NAS Fort Worth JRB, formerly Carswell Air Force Base (AFB), is in the process of planning and conducting activities for the identification, remediation, and closure of contaminated sites at the base.

The IRP is the Department of Defense's (DoD) primary mechanism for environmental response actions on U.S. Air Force installations. IRP activities are governed by provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and other applicable Federal and state regulations. These activities are being conducted through the combined efforts of the Air Force Center for Environmental Excellence (AFCEE) and the Air Force Base Conversion Agency (AFBCA). Under provisions of RCRA, the Air Force identified 68 solid waste management units (SWMU) and 19 areas of concern (AOC) for further study and clean up, if necessary.

### **CARSWELL ON-BASE**

### **SOLID WASTE MANAGEMENT UNITS 19, 20, 21, 49, 50, 53, AND AREAS OF CONCERN 17, 18, AND 19 INVESTIGATION**

Final Work Plans were completed in April for RCRA Facility Investigations (RFI) of the following areas: former Fire Training Area No. 2 (SWMU 19), a former removed aboveground waste fuel storage tank (SWMU 20), a former removed underground storage tank (SWMU 21), and the storm water drainage system (SWMU 53). Final Work Plans also were completed for the Site Investigations (SI) at a former landfill (AOC 17) and two former fire training areas (AOCs 18 and 19). Separate work plans are being prepared for the removal of SWMU 50. The Work Plan is scheduled to be submitted to AFCEE next month following receipt of flightline/sewer specifications from the Navy. A closure report is currently on hold for SWMU 49 pending the results of the removal of SWMU 50.

### **BASEWIDE GROUNDWATER MONITORING CONTINUES**

The Air Force collects groundwater samples at basewide locations four times a year to monitor the status of the contaminant plumes and to provide information for establishing trends. The current program (called Basewide Quarterly Groundwater Sampling and Analysis Program, or GSAP) has been in place since April 1995. Quarterly events occur in January, April, July, and October of each year. The GSAP Plan was updated for the year 2000's sampling events. This document was submitted to the Texas Natural Resource

---

Conservation Commission (TNRCC) in March 2000. The most recent round of quarterly monitoring was completed in April 2000. Results of the October 1999 Event were submitted to the TNRCC along with a summary of the three previous quarters as an Annual Report in March 2000.

## **RCRA FACILITY INVESTIGATION OF LANDFILLS CONTINUES**

RFIs continue at seven former landfills, also referred to as SWMUs. These landfills include Landfill No. 7 (SWMU 17), Landfill No. 3 (SWMU 26), Landfill No. 10 (SWMU 27), Landfill No. 1 (SWMU 28), Landfill No. 2 (SWMU 29), Landfill No. 9 (SWMU 30), and Landfill No. 6 (SWMU 62). The results of the RFIs will determine if a source of potential contamination exists and if the source has impacted the soil, groundwater, surface water, or sediments at or near each landfill. Work plans were prepared for the third phase of investigations at Landfills 1, 2, 3, 6, 7, and 9. Field work began last month for the third phase and continues this month. A Final RFI Report for Landfill 10 was submitted to TNRCC in March 2000 for review. No further action is being requested for Landfill 10 based on sampling results that indicate a release of hazardous materials from Landfill 10 into the environment has not occurred. TNRCC approved the Final RFI Report and closure with no further action required was received in April 2000. Although not required, AFCEE plans to remove the standing water present in Landfill 10 and fill the open trench with clean fill to grade.

## **WASTE ACCUMULATION AREA INVESTIGATION FIELD WORK**

The initial field investigation of 16 Waste Accumulation Areas (WAA) was completed in June 1999. Based on the results of the initial investigation, 9 of the 16 WAAs require additional investigation before closure can be requested. A Final Phase II RFI Work Plan Addendum presenting the results of the initial investigation and proposing plans for additional soil delineation and groundwater sampling at the 9 WAAs was submitted to AFCEE on April 7, 2000, and the Phase II field work began later that same month. An RFI report currently is being prepared for the remaining 7 WAAs with recommendations for closure. This RFI report is scheduled to be submitted to AFCEE for review in June 2000.

## **UNDERGROUND STORAGE TANK PROGRAM**

A meeting was held with AFCEE and the TNRCC/Petroleum Storage Tank (PST) division in December 1999 to discuss the status of the Underground Storage Tank (UST) program at NAS Fort Worth JRB. The results of the initial investigation for 12 UST sites were presented along with proposed plans for additional soil delineation and groundwater sampling at several of the sites. It was determined that five of the USTs will not require further investigation, and the remaining seven USTs will require additional delineation of possible contamination.

Additional sampling was performed in December 1999 at six of the seven UST sites (UST 1191-1, 1411-1, 1411-2, 1411-3, 1750-1, 1750-2) requiring further investigation. The seventh UST (UST 1427-1) which required further investigation was determined to meet the definition of a Leaking Petroleum Storage Tank (LPST) and required additional sampling to delineate contamination resulting from the tank system as well as a report assessing potential risk to human health. Soil and groundwater sampling was performed in December 1999 and March 2000. The request for an LPST identification number will be submitted to the TNRCC in May 2000.

The five UST sites not requiring further investigation were recommended as no further action sites in a report submitted to the TNRCC in April 2000. When delineation is complete at each remaining UST site, the results for all 12 USTs will be compiled and presented in a Limited Site Assessment (LSA) report.

---

The Final Site Closure Request form for AOC 1 was submitted to the TNRCC/PST division in November 1999 for review. Regulatory comments were received in January 2000. The comments denied closure of this site and requested further delineation of groundwater near the West Fork of the Trinity River and continued groundwater monitoring. A brief work plan detailing the proposed well installation along the West Fork of the Trinity River and continued groundwater sampling was submitted to the TNRCC in March 2000. This work began in April 2000 and is expected to finish later this month.

One year of groundwater monitoring was completed in October 1999 at AOC 4. AOC 4 includes the area of the former fuel hydrant system at the base. The results for the four quarters of groundwater monitoring and weekly product removal were presented in a Draft 1999 Annual Groundwater Monitoring Report submitted to AFCEE for review in April 2000. A final version will be submitted to the TNRCC in June 2000.

A response to the TNRCC/PST request for additional information regarding the Site Closure Request forms for USTs at Building 1140 and Building 4210 was submitted to the TNRCC/PST division in November 1999 for reconsideration of closure. Regulatory comments were received in April 2000 requesting additional sampling at UST 1140. Regulatory comments for UST 4210 were received in March 2000 which requested further information on the nature of the fuel stored in the UST.

In a letter from the TNRCC dated February 2000, SWMU 68 and AOC 7 were identified by the TNRCC as being under PST jurisdiction. A Site Assessment Report will be completed to compile all historical data on these sites to be presented to the TNRCC PST division.

## **CORRECTIVE MEASURES PROPOSED FOR AREA OF CONCERN 13**

Site investigations were completed in 1998 for AOC 13. AOC 13 consists of an oil/water separator (OWS) and an associated UST at Building 1145, the auto hobby shop. Results of the site investigations revealed petroleum contamination in the groundwater beneath the OWS system. The OWS and UST will be removed to eliminate the source of the contamination and to expedite closure of AOC 13. Following removal, the OWS and UST will be replaced with a new system. Design documents to remove and replace the system were submitted to AFCEE and the Navy in October 1999. The construction contract was awarded in April, and field work is currently scheduled to begin this month.

## **GROUNDWATER MONITORING WELL ABANDONMENT AND REPAIR**

More than 300 monitoring wells exist at NAS Fort Worth JRB. Well maintenance is essential to prevent vertical migration of contamination and to ensure the integrity of the groundwater samples collected from each monitoring well. An inspection of the monitoring wells at NAS Fort Worth JRB was conducted in June 1999, and minor repairs were performed at that time. The Final Work Plans for Monitoring Well Abandonment and Repair were submitted in March 2000. The work plans provide a list of the monitoring wells to be abandoned or repaired, the rationale for selecting these wells, and a discussion of the regulatory requirements. Under these work plans, 12 monitoring wells are scheduled for abandonment and 5 monitoring wells are scheduled for repair at NAS Fort Worth JRB during the next two quarters of sampling.

## **CLOSURE REQUESTED AT SWMU 7 AND SWMU 8**

A Final Closure Report and responses to comments were submitted to the TNRCC in January 2000 to provide justification for closure at SWMU 7 and SWMU 8. The Closure Report provides descriptions and operational histories of SWMU 7 (the Building 1628 OWS) and SWMU 8 (an associated UST), descriptions of the wastes handled, and summaries of the initial assessments and investigations focused on recognizing

---

any potential contamination resulting from the sites. SWMU 7 and SWMU 8 were recommended for closure based on the conclusion that a release of hazardous constituents from either site did not occur. Previous assessments and investigations showed no evidence of contamination of the soil or groundwater from either SWMU. Regulatory comments on the Final Closure Report were received in February 1999, in which the TNRCC requested that additional groundwater samples be collected in the vicinity of SWMU 7 and SWMU 8. Additional groundwater samples were collected in March 2000, and the results were submitted to the TNRCC last month. The supplemental groundwater results further confirm that there is no direct evidence of contamination of the soil or groundwater from either SWMU 7 or SWMU 8.

## **ONLINE DOCUMENTS FOR CARSWELL**

All documents published in the Carswell Administrative Record/Information Repository can be obtained from the web site hosted by AFCEE for the Carswell AFB Restoration Advisory Board. The address is <http://www.afcee.brooks.af.mil/er/carswell/nasfw/>.

### **CARSWELL OFF-BASE**

## **RCRA FACILITY INVESTIGATION OF LANDFILLS**

RFIs continue at four former landfills. These landfills include Landfills (LF) No. 4, 5, 8, and Waste Pile (WP) 07. Further delineation sampling is required at LF08 and WP07. The results of the RFI will be used to determine which TNRCC Risk Reduction Standard (RRS) is appropriate for closure of the units. If all values are below background, then a request will be forwarded to the TNRCC for no further action. If the sites have constituents above background concentrations, then additional efforts will be required that may include the remediation of the sites. Municipal and solid waste caps currently are being designed for LF04 and LF05.

## **SANITARY SEWER SYSTEM RFI**

Phase II soil and ground water sampling, and the installation of eight new monitoring wells to determine the nature and extent of contamination, occurred in March 2000. Results from this sampling effort are still pending. The results of the RFI will be used to determine which TNRCC RRS is appropriate for closure of each unit. If the values are all below background, then a closure with no further action will be requested. If the sites have constituents above background concentrations, then additional efforts will be accomplished that may include remediation of the sites. A recent camera survey of the sewer line showed several areas of possible damage. Samples will be taken in these areas to ensure that a release has not occurred.

## **OFFSITE WEAPON STORAGE AREA**

Areas of previous excavation have been filled and regraded. The site closure report will be submitted to the regulators in June 2000.

---

## **UNNAMED STREAM, GROUNDS MAINTENANCE YARD, AND AEROSPACE MUSEUM**

- Site closure was granted by the TNRCC for the Unnamed Stream.
- The closure report for the Grounds Maintenance Yard will be submitted to the regulatory agencies in June 2000.
- Further sampling is planned to fully delineate certain analytes at the Aerospace Museum.

## **PROPERTY TRANSFERS**

Property transfer at the Federal Bureau of Prisons is awaiting site closures for tank removals from the Petroleum Storage Tank division of the TNRCC.

## **AIR FORCE PLANT 4**

## **TCE PLUME INVESTIGATION**

A Draft Summary Report for the Southern Lobe Trichloroethene (TCE) Groundwater Plume Delineation was submitted to AFCEE in April 2000. The report summarized the results of the investigation which installed nine monitoring wells off-base near the former Carswell AFB southwest boundary. TCE concentrations in groundwater collected during the three rounds of sampling from the new wells range from below detection limits to 42 µg/L. With this new data, the extent of the plume has been further defined along the eastern edge of the golf course near Route 183 and White Settlement Road. In addition, bedrock elevations were mapped for the entire area and preferential groundwater flow pathways were determined.

## **GROUNDWATER TREATMENT SYSTEM UPGRADE**

A groundwater extraction system, designed to intercept TCE contaminated groundwater and prevent the plume from migrating beyond the Carswell AFB boundary, was installed at the Carswell Golf Course where White Settlement Road meets the flightline area of NAS Fort Worth JRB. The pump-and-treat system became operational in December 1993; however, it was shut down in August 1998 until repairs could be implemented. Upgrades were completed, and the system was placed back in operation from September 13 through December 20, 1999. A successful transition between operating contractors occurred, and the system was restarted on January 11, 2000. The system is currently operational.

---

## GLOSSARY OF TERMS

**Area of Concern (AOC)** – an area identified as a potential environmental concern.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** – Also known as “Superfund,” this law was enacted in 1980 and requires the identification, investigation, and clean up of contaminated sites.

**Dichloroethene (DCE)** – a chemical that can be either man-made or produced by the natural degradation of TCE.

**Feasibility Study (FS)** – an evaluation of the different cleanup methods for a hazardous waste site. The cleanup methods also are evaluated for cost-effectiveness as well as how well each method will work at a particular site.

**Groundwater Plume** – a body of groundwater containing dissolved contaminants at concentrations exceeding Federal or state drinking water levels at multiple sampling locations (monitoring wells). When solvents such as TCE are released into the environment by spilling or dumping, they move downward through the soil and then become dissolved into the groundwater. Because groundwater naturally moves through subsurface soils, this dissolved groundwater contamination also moves, thereby creating a groundwater plume.

**Light Non-Aqueous Phase Liquid (LNAPL)** – a non-soluble liquid that is less dense than water. These liquids float on water and include such materials as gasoline, aviation fuels, and oils.

**Microgram per Liter ( $\mu\text{g/L}$ )** – a metric unit of measurement of a particular compound dissolved in a liquid. In environmental investigations, this unit of measure is generally used to describe the concentration of a contaminant dissolved in groundwater or surface water. One thousand micrograms equals 1 milligram.

**Milligram per Liter ( $\text{mg/L}$ )** – a metric unit of measurement of a particular compound dissolved in a liquid. In environmental investigations, this unit of measure is generally used to describe the concentration of a contaminant dissolved in groundwater or surface water. One milligram contains 1,000 micrograms.

**Natural Attenuation** – dilution, dispersion, (bio)degradation, irreversible sorption and/or radioactive decay of contaminants in soils and groundwater. Natural attenuation causes a net reduction of contaminant toxicity and human and ecological risk.

**Oil Water Separator (OWS)** – an oil water separator is used to separate the oil from waste water. Oil water separators are used commonly with service stations, maintenance shops, and surface water drainage systems where surface water run off may collect oil drippings or small spills.

**Resource Conservation and Recovery Act (RCRA)** – a law enacted to identify active hazardous waste generating facilities, investigate past site contamination, and initiate cleanup and pollution prevention measures.

---

**RCRA Facility Assessment (RFA)** – an assessment of a storage unit or site regulated under RCRA, the results of which may either indicate no further action is necessary or further investigation is required through an RFI.

**RCRA Facility Investigation (RFI)** – an investigation of soil and groundwater contamination resulting from a release of contaminants from a storage unit regulated under RCRA.

**Risk Reduction Standard (RRS)** – a risk-based cleanup standard for soil and groundwater defined by the Texas Natural Resource Conservation Commission.

**Site Investigation (SI)** – a preliminary environmental study of a site possibly contaminated by an underground storage tank used for storing petroleum products such as gasoline or aviation fuels.

**Solid Waste Management Unit (SWMU)** – a defined area used for storage or disposal of hazardous wastes as defined by RCRA.

**Trichloroethene (TCE)** – an industrial solvent used to dissolve or disperse another substance such as oil; often used in degreasing metal parts.

**Underground Storage Tank (UST)** – a tank installed beneath the ground surface used for storing liquids such as gasoline, aviation fuels, and waste oils.

**Vinyl Chloride** – a chemical compound produced both by manufacturing and by degradation of TCE in the environment.

**Volatile Organic Compound (VOC)** – a type of organic chemical or compound with a high propensity to vaporize.

**Waste Accumulation Area (WAA)** – a specified area used for temporary storage of hazardous wastes.

---

## FOR MORE INFORMATION

*If you would like more information, please see our web site at <http://www.afcee.brooks.af.mil/er/carswell/nasfw/> or contact the following individuals.*

**Carswell On-Base:** *Michael Dodyk, HQ AFCEE, at (817) 782-7167 or via e-mail at [Mike.Dodyk@fwh.afres.af.mil](mailto:Mike.Dodyk@fwh.afres.af.mil) or Don Ficklen, HQ AFCEE, at (210) 536-5290 or via e-mail at [Holmes.Ficklen@HQAFCEE.brooks.af.mil](mailto:Holmes.Ficklen@HQAFCEE.brooks.af.mil)*

**AFP 4:** *George Walters, the Aeronautical Systems Center, Wright-Patterson Air Force Base, OH, at 1-800-982-7248 Ext. 416 or via e-mail at [George.Walters@wpafb.af.mil](mailto:George.Walters@wpafb.af.mil)*

**Carswell Off-Base:** *Rafael Vazquez or Alvin Brown, AFBCA Regional Operating Location-Bergstrom, at (877) 386-5429 or via e-mail at [rvazquez@afbda1.hq.af.mil](mailto:rvazquez@afbda1.hq.af.mil) or [abrown@afbda1.hq.af.mil](mailto:abrown@afbda1.hq.af.mil)*