



Guardian

America's First Choice for Environmental Restoration

A Publication of the Environmental Restoration Program

Travis Air Force Base, California

July 2008

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Acronyms

CERCLA: *The Comprehensive Environmental Response, Compensation, and Liability Act, known as Superfund, is a law that deals with releases of hazardous substances that endanger public health or the environment.*

UVOX: *Ultraviolet oxidation, is a two-step treatment technology that injects hydrogen peroxide into contaminated groundwater and exposed it to ultraviolet rays. Each peroxide molecule divides into two hydroxide ions that break contaminants down into harmless byproducts.*



(Photo by Lonnie Duke)

Pushing Probes: A field technician from Geoprobe, Inc. prepares to push a gas probe into the soil above groundwater that is contaminated with solvents. The plastic tube that protrudes from the top of the probe will be used to collect soil gas samples as part of a vapor intrusion assessment.

Care About Indoor Air

Travis Participates in Local and National Air Studies

By Lonnie Duke

Travis Environmental Project Manager

Indoor Air Quality first became a national human health issue after reports of Sick Building Syndrome made the news headlines. Most of the causes of this syndrome were related to chemical sources within buildings, flaws in air conditioning systems and mold contamination. However, the Environmental Protection Agency (EPA) is also looking at sources outside of buildings and the potential for Vapor Intrusion (VI).

VI is defined as the vapor-phase migration of volatile organic and/or inorganic compounds into buildings from underlying contaminated groundwater and/or soil. In other

words, some chemicals that are dissolved in groundwater can enter the air between soil particles (soil gas), move with the air into basements or through cracks in building foundations, and mix with air that we breathe.

Like other industrial facilities that used chlorinated solvents in the past, Travis AFB is conducting a VI assessment to see if this issue needs to be a part of the groundwater remedy selection process. Travis AFB has 19 contaminated groundwater sites in its Environmental Restoration Program, which is managed by the 60th Civil Engineer Squadron. All of these sites are associated with industrial buildings, mostly located around the flight line. Since there are many occupied buildings around the flight line, the possibility of VI needs to be evaluated.

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Visit our Environmental Restoration Program web site at <http://public.travis.amc.af.mil/enviro>



Guardian

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The *Guardian* is a publication of the 60th Civil Engineer Squadron's Environmental Restoration Program (ERP). The newsletter is designed to inform and educate the public about the base's ongoing environmental cleanup program. Contents expressed herein are not necessarily the official views of, or endorsed by, the U.S. government, the Department of Defense, or the Department of the Air Force. Additional information about the program can be obtained from the public website at <http://public.travis.amc.af.mil/enviro>. Questions and comments about the program may be sent to this address:

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Surrounded By Eagles

You've probably heard that "it is not easy to soar with the eagles when you are surrounded by turkeys."

One reason that we usually find a joke to be funny is that there is a grain of truth in it. I heard this saying early in my career, and the truth within it still resonates in me today. The success of an individual is influenced by those around him/her. Likewise, the success of a team is influenced by each member on the team. I hear this truth whenever a high ranking Air Force officer addresses his/her troops or when a coach talks to his/her team.

Looking back on the success the Travis AFB Environmental Restoration Branch has made on the cleanup of contaminated soil and groundwater sites, I can tie this success directly to the people who were actively involved with the planning, decision-making and execution of each and every restoration project. This applies to base project managers, Air Force leadership, environmental contractors, and regulatory agency representatives alike. It is not a coincidence that the phrase "I love it when a plan comes together" was often used on the old television show "The A Team". I also loved it every time that years of planning came together and resulted in a cleanup action on base that benefitted the Air Force and the local community. Looking forward to the Environmental Restoration challenges ahead, the recipe for success is not going to change. I will still need two parts of professional project management, three parts of regulatory agencies and ten parts Restoration Advisory Board (RAB) members. All of whom have eagle-like qualities.

Another thing that is not going to change is the eagle-like quality of leadership within the 60th Civil Engineer Squadron that directly oversees the Travis Asset Management Flight, which includes the Environmental Restoration Branch. Although the people that fill these leadership positions rotate through, we have been happy to see that they are indeed eagles.

Last month we said goodbye to an energetic and supportive Lieutenant Colonel (Lt Col) Scott Hoover, who led the squadron at a time when we were carrying



VIEWPOINT

Mark H. Smith
Travis Restoration
Program Manager

out a six-month, \$3.7 million soil cleanup program. This month we greeted Lt Col Wade Lawrence as the new Base Civil Engineer. Lt Col Lawrence brings a wealth of environmental experience gained while serving as the Asset Management Integration Chief at the Pentagon and was instrumental in setting up the asset management structure.

Long-time readers of this newsletter remember the times when our RAB, a volunteer group of interested community leaders and local citizens went to bat for us to request stable funding from Air Mobility Command and to offer ways to improve the quality and readability of our reports or to disseminate information on our cleanup program to the rest of the community. Individuals can't be much more eagle-like than that.

During our last public meeting we welcomed the most recent member to the RAB. Ms. Kate Wren Gavlak serves as the School Superintendent for the Travis Unified School District and has been involved with student education for over 25 years. Combined with her participation as a member of the Vacaville and Fairfield-Suisun Chambers of Commerce, she brings a considerable amount of management and business experience to the table. As an added bonus, her college degree in agribusiness will give her the background for advising the base on several ecological protection issues in the coming years. She joins a small but effective group of members, including a County Supervisor and several retired military leaders, who continue to serve Travis AFB and provide the support that money cannot buy.

We continue to work on cleanup challenges to free up base property that supports the base mission and to attract the best people to do the best job they can. And that's no joke.



Vapor

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The Travis VI assessment began in June 2008 and is scheduled for 18 months. The first step in the assessment is a screening process that uses a sophisticated model and regulatory screening values to evaluate whether contaminant concentrations in groundwater are high enough to potentially impact indoor air quality. If so, then each building will be inspected to determine if VOCs can possibly migrate into it from the subsurface.

At many of these locations, probes (slotted pipes) will be inserted into the soil, and soil gas samples will be collected and analyzed for VOCs to determine if VI is a possibility at the site. Indoor air samples using SUMMA canisters will be collected to determine if VI is actually occurring.

A SUMMA canister is a specially constructed and certified-clean cylinder that is evacuated of all air to create a vacuum. It has a calibrated valve that is opened wide enough to allow air to enter the cylinder gradually over a 24 hour period. After 24 hours, the canister valve is closed, and the canister is sent to a laboratory to remove and analyze the collected air.

“Sample collection and analysis using SUMMA canisters are somewhat expensive,” stated Mark Smith, Travis Remedial Program Manager. “However, laboratories can use them to measure air contaminants in the parts-per-trillion range, which is incredibly low. To put this into perspective, suppose that one part per million is represented by a gallon of a chemical in

an Olympic-size swimming pool. That means that one part per trillion is represented by a gallon of a chemical in one million Olympic-size swimming pools.”

VI studies are fairly new, since the possibility of vapors emanating from contaminated groundwater into a building has been confirmed in just the past few years. Most VI studies thus far have dealt with residential buildings. Since people spend more time in their home than at work, and the potential for exposure to small children exists, the possibility of health concerns was real and needed to be addressed first. To date, there has not been much VI data collected from industrial sites. However, this will soon change.

Coincidentally, the base is also participating in two national VI studies, the first of which is funded and managed by the Air Force Institute for Operational Health (AFIOH). The first phase of this study took place on May 14-15, 2008 and consisted of the collection of indoor air samples from five facilities located above or near groundwater that is contaminated with Volatile Organic Compounds (VOCs). After the AFIOH team receives the sample analyses, the second phase will look closely at the pathway between the groundwater and the buildings with the highest chemical detections.

If the building construction cuts off the pathway between groundwater and the building, then VI is not an issue. One facility chosen for the first phase is a newer office building, with a passive ventilation system built into the foundation. This passive ventilation system consists of a vapor barrier installed just below the building's

foundation and a series of slotted pipes below the vapor barrier that vent to the atmosphere. Any VOCs that would have migrated into the building now have a path of least resistance to the atmosphere. The purpose of sampling inside this building was to demonstrate the effectiveness of the passive ventilation system.

A second national VI study in which Travis AFB is participating is funded by the Environmental Security Technology Certification Program (ESTCP). The ESTCP is a Department of Defense (DOD) program that promotes innovative, cost-effective environmental technologies through demonstration and validation at DOD sites. The focus of this study is on the air pressure inside a building, which can increase or decrease, depending on outdoor wind conditions or air conditioning settings. The ESTCP team will apply positive and negative air pressure to one or two study buildings and measure changes in VI over different periods of time. The team hopes to develop sampling protocols that will be easy to use and will increase the accuracy of future VI assessments.

Between these three separate endeavors, the base will gain a considerable amount of VI data that will be useful in the selection of appropriate groundwater cleanup remedies. “At the same time, our fieldwork will increase the growing body of knowledge that will improve our understanding of vapor intrusion for the rest of the DOD as well as private industry,” Mr. Smith said. “This is a very dynamic time to be working these important environmental issues, and we all benefit from this active participation. We'll keep you posted.” 

The Five-Year Forest Focus

By Glenn Anderson

Travis Environmental Project Manager

Normally, when we look at our environmental treatment systems on a daily basis, we care about the details. We calculate the number of gallons per minute treated by activated carbon or scrutinize lab reports for the latest chemical concentrations in monitoring wells or estimate the months of useful service remaining in our ultraviolet bulbs of our UVOx system before they have to be replaced.

However, federal law also requires each cleanup site to step away from the details (trees) and to look at the overall cleanup

picture (forest). The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) calls this a Five-Year Review, and the Environmental Protection Agency (EPA) is required to review the remedies at Superfund sites where hazardous substances remain at levels that potentially pose an unacceptable risk. In our case, Travis AFB is responsible for conducting the Five-Year Review, and the EPA reviews the results.

The purpose of the Five-Year Review is to verify that all site remedies are protective of human health and the environment. This applies when a remedial action leaves

hazardous substances on the site at levels that do not allow for unlimited use and unrestricted exposure. For our purposes, unlimited use and unrestricted exposure means that there are no environmental restrictions placed on the potential use of land or other natural resources.

This was actually the second Five-Year Review for Travis AFB. The first one took place in 2003 and focused almost exclusively on groundwater cleanup. The second review also looked at soil and sediment sites.

The Five-Year Review is an important part of any CERCLA cleanup program. CERCLA is designed to investigate current environmental conditions, evaluate

Focus

From page 3 possible cleanup alternatives, and select and carry out the most appropriate cleanup strategy. This structured process promotes progress by avoiding second guessing and revisiting previous work. The Five-Year Review revisits previous assumptions and looks at new considerations that were not around during the development of the cleanup strategy.

Generally, the Second Five-Year Review found the soil and groundwater remedies on Travis AFB to be protective of human health and the environment. However, there is still a lot of cleanup to complete and several issues to resolve. Over the next two years, Travis AFB will be working with federal and State of California environmental regulatory agencies to select the groundwater cleanup strategies and cleanup levels that will complete its cleanup program. During the selection process, the issues identified during the Second Five-Year Review will be addressed.

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Travis AFB Restoration Advisory Board Meeting

October 23, 2008
7 p.m.

Northern Solano County Association of Realtors
3690 Hilborn Rd
Fairfield, CA



LOCATION OF INFORMATION REPOSITORIES

Vacaville Public Library

1020 Ulatis Drive
Vacaville, CA 95688

(707) 449-6290

Monday-Thursday: 10 a.m. - 9 p.m.

Friday-Saturday: 10 a.m. - 5 p.m.

Sunday: 1 p.m. - 5 p.m.

Fairfield-Suisun Com. Library

1150 Kentucky Street
Fairfield, CA 94533

(707) 421-6500

Monday-Thursday: 10 a.m. - 9 p.m.

Friday-Saturday: 10 a.m. - 5 p.m.

Sunday: 1 p.m. - 5 p.m.

Mitchell Memorial Library

510 Travis Boulevard
Travis AFB, CA 94535

(707) 424-3279

Monday-Thursday: 10 a.m. - 9 p.m.

Friday: Closed

Saturday: 12 p.m. - 6 p.m.

Sunday: 12 p.m. - 6 p.m.

If you would like more information or need special accommodations for the RAB meeting, please contact Mark Smith, (707) 424-3062. You can also view our web site at <http://public.travis.afmilitary.com>

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