Edwards Air Force Base
95th Air Base Wing
Environmental Management

Report to STAKEHOLDERS

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Windscorpions: no cause for alarm

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Second of four RODs targeting cleanup at AFRL signed

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Report to
STAKEHOLDERS

Report to Stakeholders is a publication of Edwards Air Force Base, 95th Air Base Wing, Environmental Management. Its purpose is to inform and educate the public, base workers and residents about continuing environmental and safety efforts on base. It currently has a circulation of 6,000, including about 2,000 subscribers.

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Temporary shelter

FLIGHT CAGE *— This is the flight cage on the APET premises. The cage houses injured birds found on base before they are transported to a rehabilitation center.*

Last summer, a flight cage was permanently placed at the APET adoption and rescue facility at Edwards Air Force Base. It is used to house injured birds and raptors before they are sent to a rehabilitation facility or veterinary clinic.

"Injured birds or raptors are held in the flight cage until they can be transported to a different area," said Fulvio Fontana, APET president. "The cage can house one large raptor at a time, like a red-tailed hawk. We hold the birds until we can take them elsewhere to be treated."

Built in 2007, the flight cage is intended to house birds and raptors such as the great horned owl, and the Swainson's and red-tailed hawks. The enclosure is 10 feet wide, 12 feet tall and 50 feet long. The pen was designed to mirror flight cages at rehabilitation facilities such as the Ojai Raptor Center in Ojai, Calif.

Perches, or branches, are used to make the pen more like the birds' natural environment and the cage was also designed to have an open base, leaving the ground exposed for the same reason.

Biologists have great expectations about the future use of the flight cage, should they find a sick or injured bird.

APET is staffed by volunteers in varying shifts from 4 a.m. to 10 p.m. seven days a week, and is looking for adult and teenage volunteers to help out. Funding for the organization is completely through donations, fundraisers and the Combined Federal Campaign in which donors can choose a charity to send their donations.

For more information on APET, you may visit *www.edwardsapet.org.*

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What's on the cover?

APPROVED *— Patrice Hallman, restoration program manager, left, looks at the Air Force Research Laboratory Soil and Debris Record of Decision with Robert Wood, Environmental Management director, center, and 95th Air Base Wing Vice Commander Col. Nancy Wharton. See article on page 4.*

WINDSCORPIONS

No cause for alarm

While a kiss from an unearthly windscorpion might give you a fat lip, you need not worry about your health or safety if bitten. Like with any bug bite or wound, proper cleaning of the area is necessary to prevent infection, but there is no cause for alarm. Windscorpions are harmless to people.

"They're pretty creepy looking and have a painful bite, but windscorpions are nonvenomous," said Rebecca Moores, a biologist at Environmental Management.

Commonly found at Edwards Air Force Base, windscorpions are frequently mistaken for common house spiders but are neither spiders nor scorpions. Windscorpions are related to spiders, but do not have venom glands or web-spinning organs and look like scorpions but do not have stingers.

"They can be identified by their pale beige color and dark chelicerae, or pincer-like jaws," Moores said. "Another way to identify them is that if they see you, they raise their pedipalps, or front leg-like appendages, in self defense."

"Many people confuse windscorpions with camel spiders found in Iraq because they look similar," Moores said. "Animals sometimes develop similar forms because they live in similar environments — in this case, desert environments."

The windscorpion and camel spider stem from the *Solifugidae* order of arachnids, but are from different families. Some differences between the two species are the areas in which they are found and their sizes. Windscorpions are found mainly in the southwest United States and range from three-quarters to 1½ inches long, while camel spiders are found from northern Africa to Eastern Europe and Asia, and can be up to six inches long.

Windscorpions live in burrows or under rocks and emerge at night to hunt. Sometimes during their nightly excursions, the creepy crawlers find their way into offices, facilities and houses. This is usually because they have followed prey — insects, spiders and other small creatures — indoors.

If a worker or resident spots a windscorpion indoors, they can take it outside or kill it. Even though windscorpions are solitary creatures, there have been occasions in which buildings have become infested with them. If a worker or resident suspects windscorpion infestation, they should call Pest Management at (661) 277-2431 for assistance.

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Photo by Bryan E. Reynolds, *www.bryanreynoldsphoto.com*

***OUCH!** — This windscorpion, above, is shown devouring its captured prey. Windscorpions use their front, leg-like appendages to capture prey and pass it to their jaws.*

Photo by Warren Savary, *www.solpugid.com/eremobates.htm*

Quick facts

Windscorpions (*Eremobates pallipes*) are nonvenomous predatory arachnids that give a painful bite.

Identification — Yellowish-brown arachnid ranging from three-quarters to 1½ inches long, identifiable by large, pincer-like jaws and two pedipalps, or leg-like appendages located on its head.

Habitat — Lives in burrows or under rocks from the arid southwest to the San Joaquin Valley, Calif.

Interesting facts

- Windscorpions have the largest jaw size to body ratio of any creature.
- The noctural creatures are from the *Solifugidae* order of arachnids. The order name is derived from Latin meaning "those that flee from the sun."

Base officials sign second of four RODs targeting cleanup at AFRL

Edwards Air Force Base (AFB) officials approved a document on May 9 for the final cleanup of soil and debris sites at the Air Force Research Laboratory (AFRL). 95th Air Base Wing Vice Commander Col. Nancy Wharton called the cleanup plan a major accomplishment. This is the second AFRL Record of Decision (ROD) to be signed at the base.

"Of the four RODs covering cleanup at the AFRL, this is the only document focusing on soil and debris," said Patrice Hallman, program manager for the soil and debris sites at the AFRL. "The others primarily address groundwater contamination."

Eight of the 18 soil and debris sites at the AFRL require further cleanup action. The other 10 sites were either cleaned up through interim removal actions or had concentration levels below regulatory limits, thereby not requiring any cleanup.

Contaminants of concern at the eight remaining sites include chlorinated solvents, petroleum hydrocarbons, N-nitrosodimethylamine and perchlorate. These contaminants were historically used for either degreasing metal parts or in the production of rocket fuel.

The ROD for the soil and debris sites at the AFRL calls for a combination of excavations, land use controls, long-term monitoring and five-year reviews on all of the sites.

Base restoration experts plan to install land use controls in areas that cannot be cleaned up to unrestricted use standards given safety and technological restrictions. For example, there are mine shafts that may contain explosive material that could be disturbed by drilling or excavation activities.

Fencing, warning signs and locked chains or barriers across access roads are types of land use controls designed to keep workers away from the contaminated areas. Access to the AFRL is already restricted from the general public through the use of guard gates and fencing.

"We are also taking preventive measures to ensure any soil and debris sites that cannot be cleaned up will not affect the groundwater," Hallman said. "For instance, we are taking measures to prevent rainwater from entering into the missile silos and capped mine shafts."

"If existing wells indicate a site is contributing to groundwater contamination, we will take immediate steps to address the issue. Currently there are no indications that these sites pose a significant continuining threat to groundwater."

The estimated total cost for remedial efforts is about five million dollars during a 30-year period according to restoration experts.

"The remedies agreed upon in the ROD are cost-efficient in their protection of human health and the environment," said Dr. Mahbub Hussain, an environmental engineer.

The AFRL has operated as a rocket research and testing facility since the 1950s. Contamination at the soil and debris sites is the result of former activities at several rocket test areas and industrial facilities, a landfill, fire training area and two historic mineral mines.

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***SIGNATURE, PLEASE** — Col. Nancy Wharton, 95th Air Base Wing Vice Commander, signs the Air Force Research Laboratory Soil and Debris Record of Decision. Behind her, from left, are Robert Wood, Environmental Management director; Patrice Hallman, program manager for the soil and debris sites at the Air Force Research Laboratory; Ai Duong, Restoration Division chief and Dr. Mahbub Hussain, environmental engineer.*

Restoration Advisory Board (RAB) Meeting

HIGHLIGHTS

The following report highlights the May 15, 2008, Restoration Advisory Board (RAB) meeting in Lancaster, Calif.

Results and Conclusions of the Site 18 In Situ Chemical Oxidation (Persulfate) Treatability Study — The oxidizing agent, persulfate, effectively treated trichloroethene (TCE) and 1,4-dioxane according to results from a treatability study conducted at Operable Unit 1, Site 18, said Earth Tech Senior Project Director Tara MacHarg.

Cleanup experts injected the oxidizer into the ground to force a chemical reaction to break down contaminants into harmless byproducts. Tetrachloroethene (PCE) and 1, 2-dichloroethane (DCA) were not as effectively reduced.

The TCE was most affected, with concentrations decreasing to below maximum contaminant level. A pre-existing dual-phase-extraction system had lowered contaminant concentration levels but was not getting Edwards Air Force Base restoration officials closer to their cleanup goals. This study method proved to be more effective and will now be considered as an option for future cleanup.

MacHarg noted an increase in acetone and metal concentrations as a byproduct of the chemical oxidation. These concentrations are expected to decrease naturally to background conditions, as has been the case in other types of studies. The study area contaminants are remnants of a storm drain that leaked wastewater from an engine maintenance facility housing solvents and fuels. The 4,800-foot-long contaminant plume is located on the Main Base flightline.

LAST MEETING *— Jehiel Cass, left, from the Lahontan Regional Water Quality Control Board looks on while John Harris from the California Department of Toxic Substances Control talks about relinquishing his duties as his agency's remedial project manager for Edwards Air Force Base at the Restoration Advisory Board meeting in May. Kevin Depies replaced Harris.*

The next quarterly RAB meeting is tentatively scheduled for Aug. 21, 2008, at 5:30 p.m. in California City, Calif. The venue will be determined at a later time. For more information on the RAB, you may refer to the back page of this newsletter under RAB Information.

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A FEW RAB MEMBERS *— From left, are Carolyn Coe, Dean Baker, Ai Duong, Robert Wood, Brenda Weems-Hunter, Peter Zorba and Ed Sileo.*

Teacher workshop focuses on global climate change curriculum

***SOLAR POWER** — A teacher who attended the Mojave Environmental Education Consortium workshop tests his solar-powered fan in front of the Environmental Management building in April.*

Teachers attended a Mojave Environmental Education Consortium (MEEC) workshop on "Climate Change in California" sponsored by the Environmental Management (EM) office at Edwards Air Force Base in April.

Environmental Management Director Robert Wood welcomed the guests and told attendees about the role Environmental Mangement plays in accomplishing the critical mission of the Air Force Flight Test Center. He also highlighted individual responsibility in helping to care for the environment.

"What we want to remember is, it's the only Earth we have and we want to live here," Wood said. "There are a lot of things we can do as individuals to help improve the environment."

Shortly after, air quality specialist Madeline Almodovar conducted a hands-on solar power activity. The activity comes from a solar-power kit designed for classrooms. The kit included 0.5 volt solar cells, solar motors and fans.

"Teachers assembled their own solar-powered systems and exposed them to the sun. They watched the fans rotate and learned how it is possible to produce mechanical power without burning fuels," Almodovar said.

Almodovar also gave an alternative energy overview. That included a model vehicle demonstration using a fuel cell that ran on water.

"The purpose of these [types] of demonstrations is to show there are other sources of energy that we can use, rather than using fossil fuels, or even combustion processes," Almodovar said. "These sources have less impact on the environment and sustainably support our society's development."

Dr. Stephen Watts, restoration program manager, presented the carbon cycle, stating that "there is a lot of information on global climate change on the Internet; some of it, inaccurate. It is good to be cautious."

In his presentation, Dr. Watts provided some reliable sources from the federal government. Reliable sources include the National Oceanic and Atmospheric Administration, Earth System Research Laboratory, the Intergovernmental Panel on Climate Change, the National Center for Atmospheric Research, the Carbon Dioxide Information Analysis Center, the U.S. Global Change Research Center, and NASA's Earth Observatory Library.

The consortium is the High Desert chapter of the California Regional Environmental Education Community, also known as CREEC, Region 10. According to the MEEC Web site, the groups' combined mission is to link teachers with high quality environmental education resources to improve the environmental literacy of California's students.

The curriculum provided by MEEC is targeted for students in grades nine to 12. "Everything is standards driven," said Violette Roberts, who is the community relations and education manager for the Antelope Valley Air Quality Management District and MEEC. "We want to help teachers learn about the point they want to get across."

"If a school is located in the Mojave Desert it is probably within the MEEC's jurisdiction," Roberts said. "There is a list of sites these schools may visit. We pay for the bus and the transportation the school needs to get to a MEEC tour site."

For more information regarding the MEEC program, you may visit *www.meeconline.com*.

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Base hazardous waste support staff 'does it right' with annual inspection

When Environmental Management's hazardous waste staff passed its 14th state inspection in a row in April, it was business as usual. But when the inspector asked if he could snap photos of the base facilities to use as examples to show others how to do it right, team members knew they had done well.

They had become a benchmark.

Kathryn Curtis, base hazardous and universal waste manager, credits the team's success to its strong day-to-day work ethic. "We handle hazardous waste properly all of the time, rather than just some of the time," she said.

"Inspectors are trained to find the smallest things wrong with operations or paperwork," Curtis said. "They go in with the expectation of finding something. But this time, the inspector asked if he could take pictures. He took pictures back to use as examples for other sites."

According to Curtis, the Hazardous Waste Support Facility handles an average of 600 tons of hazardous waste per year. "We are a fairly large storage facility," she added.

Unlike other hazardous waste facilities its size that handle just a few different wastes, the Edwards Air Force Base (AFB) facility deals with more than 1,100 different waste profiles. Every time a new hazardous waste is brought to the facility, a new profile is created. The profile details how to handle the waste and any special requirements for shipping it off base for disposal.

Having so many profiles makes the hazardous waste team flexible when dealing with new situations. "We're always thinking in advance about potential problems and issues," Curtis said.

For example, last year the hazardous waste staff was called out to a base facility to pick up 1,200 small bottles someone found in a storage locker. Many of them were unmarked and had to be sampled to make profiles before they could be packaged properly for shipment.

Most of the time, the hazardous waste facility staff collects and manages jet-fuel residues, used cleaning solutions, paint wastes, oil, and a few other types of hazardous waste. They also collect universal waste. That includes batteries, electronic devices and fluorescent tubes.

"We store, handle and package hazardous waste," Curtis said. "The team tracks it from the time it is generated to its final disposal at an off-base permanent storage facility."

The centralized hazardous waste facility at Edwards AFB has been in continuous operation since 1993. The facility processes about 220,000 pounds of bulk or solid hazardous waste each month.

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***ALL CLEAR** — The Hazardous Waste Support Facilty, shown in back, and the Consolidated Recycling and Universal Waste Facility, right, passed an annual audit with flying colors for the 14th year in a row. Team members are from left, Julian Gumayagay, Ed Corbett, Jeff Shastid, Dave Parker, Glenn Beshara, Cat McDonald (holding Mr. Biggles Worth), Sharon Soliz and Ruben Soliz. Not pictured is Mike Wells.*

Where to Find More INFORMATION

Published data and documents relating to Environmental Management are available for public review in information repositories at three locations. The current information repositories are located in the cities of Lancaster and Rosamond, as well as Edwards Air Force Base. They are updated when new documents are released.

For questions about information in the repositories, you may contact Gary Hatch, Environmental Public Affairs at (661) 277-1454 or by e-mail at *95abw.pae@edwards.af.mil*. Here is a list of our current information repositories:

Edwards Air Force Base Library
5 W. Yeager Blvd.
Building 2665
Edwards AFB, Calif.
(661) 275-2665
Hours of operation: Mon-Thu 9:30 a.m. – 7 p.m.
Fri 9:30 a.m. – 6 p.m.
Sat-Sun 10:30 a.m. – 6 p.m.

Kern County Public Library
Wanda Kirk Branch
3611 Rosamond Blvd.
Rosamond, Calif.
(661) 256-3236
Hours of operation: Tue-Wed 12 p.m. – 8 p.m.
Thu-Sat 10 a.m. – 6 p.m.

Los Angeles County Public Library
601 W. Lancaster Blvd.
Lancaster, Calif.
(661) 948-5029
Hours of operation: Mon-Wed 10 a.m. – 8 p.m.
Thu-Fri 10 a.m. – 5 p.m.
Sat 11 a.m. – 5 p.m.

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Restoration Advisory Board (RAB) Information

The RAB is made up of elected representatives from communities in and around Edwards Air Force Base, regulators from federal and state agencies and base officials. The board's purpose is to provide a forum for two-way communication among base restoration officials, regulators and representatives regarding the cleanup of contamination from past military activities.

The board meets quarterly, rotating meeting locations in communities surrounding the base. The public is welcome to attend. If you have any questions or concerns about the cleanup activities going on at Edwards, you may contact your community's RAB member or Gary Hatch, Environmental Public Affairs, at (661) 277-1454.

Next Quarterly Meeting

Date: Aug. 21, 2008
Time: 5:30 p.m.
Location: To be determined
California City, CA 93505

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