Edwards Air Force Base
95th Air Base Wing
Environmental Management

Report to STAKEHOLDERS

March 2008 Volume 13 No. 3

Social Responsibility:

Environmental Management's Responsibility To You

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Natural process cleans Edwards wastewater

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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.

Contents of the *Report to Stakeholders* are not necessarily the official view of, or endorsed by, the U.S. government, the Department of Defense or the Department of the Air Force.

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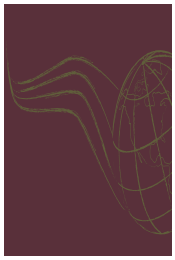

What's on the cover?
SOCIAL RESPONSIBILITY *is the set of values that shape the way an organization functions. Integrity is the key component. See article on page 6.*

Thursday, April 17
10 a.m. - 2 p.m.
Mobile Home Park
across from BX

EARTH DAY 08

Confronting Climate Change in California and around the Globe

Scheduled Events & Displays

- Workshops on Global Climate Change
- Renewable Energy Demonstrations
- Air Quality Demonstrations
- Liquid Nitrogen Ice Cream
- Live Snakes and Desert Tortoises
- Environmental Buzz Game and Prizes
- Vendors selling Environmentally-Friendly Wares
- Archaeology Display
- Minerals and Geology
- Eddie the Edwards Tortoise
- Hybrid Cars
- Live Music

Environmental Management (EM) is looking for organizations and vendors who would like to set up a booth at this event. This is a great opportunity to get your message out to housing residents and base employees. Booths will be located inside a large tent provided by EM. For more information on events or booths, please contact Heidi Gesiriech at 277-7049 or 277-1401. The deadline to schedule a booth is March 21, 2008. Space is limited, so early registration is advised.

WANDERING *— A coyote walks in front of the Enviornmental Management building on base.*

Coyotes seen roaming around the base in search of food and shelter

Coyotes may be spotted roaming through the housing and work areas on base. Residents shouldn't be alarmed by this, but there are steps they can take to discourage these wanderers from visiting their own yards.

Coyotes primarily hunt small mammals like rabits, ground squirrels and mice — acting as natural deterrents to overpopulation. With the housing project on base leaving some houses empty for long periods of time, it was natural for these desert animals to begin moving in.

"The abandoned houses we have on base can be a real draw for the coyotes," biologist Mark Bratton said. "Families living next to these abandoned houses may have pet food or small pets outside, and watered lawns attract rabbits, one of the main dishes in a coyote's diet. It's the ideal combination of easy food and shelter."

"They are there in search of water, too. The housing area provides protection from the elements," added biologist Amber Bruno.

While the coyotes may be taking advantage of an ideal situation, the California Department of Fish and Game warns that these conditions could lead coyotes to display more aggressive behavior. Coyotes can lose their natural fear of humans if intentionally fed or given access to pet food, water or garbage.

"Coyotes should be treated like any other wild animal," Bratton said. "You should not attempt to feed or pet a coyote if it wanders into your housing area. Keep clear of the animal, observe from a distance and keep food and pets out of its reach."

Environmental Management biologists stress that coyotes are highly unlikely to attack people. To discourage visits from coyotes, they offer the following suggestions to base residents:

- Do not leave food or water outside. Cat and dog food attract hungry coyotes.

- Do not leave small pets — such as cats, domestic rabbits and small dogs — outside unattended, especially at night.
- Trim bushes and shrubs to minimize hiding places or shady spots.
- When trash is not being collected, secure your garbage cans so they cannot easily be knocked down or rummaged through. Use rope or elastic cord to secure the can to a fence or other immovable object or use one to keep the container closed.

"Eliminating food, water and shady areas around your home will discourage a coyote from hanging around," Bratton said. "The less comfortable coyotes feel around us, the better. We want them to maintain their wariness of humans."

If you do encounter a coyote in one of the housing areas, keep the following tips in mind:

- Do not panic
- Do not run from a coyote
- Stand straight and make yourself appear tall and large
- Turn your body sideways and slowly walk away from the coyote, giving it plenty of room

***SNIFF** — A coyote sniffs the grass at the base golf course, another area that attracts rabbits.*

In the rare case that a coyote poses a threat to the public, Security Forces is equipped to respond. Base residents can contact Security Forces at (661) 277-3340 with any safety concerns. Biological questions can be referred to Environmental Management at (661) 277-1401. More information about coyotes can be found on the California Department of Fish and Game Web site at *http://www.dfg.ca.gov/* RTS

Safety on the road encouraged by Edwards Air Force Base officials

Edwards Air Force Base officials and the Airmen Against Drunk Driving handed out flyers at the outbound gates on Dec. 21, 2007. More than 5,000 flyers were handed out to keep those who live and work on base aware of the dangers of drunk driving.

"The purpose of handing out the flyers was to let people know that we care about them and to have a safe holiday," said Vincent Duny, chief of Ground Safety. "I think the flyers were effective because we had zero fatal mishaps over the holidays."

Volunteers distributed the flyers, along with a candy cane, as drivers exited the base. The flyer provided information about base speed limits, penalties and a checklist of driving regulations on base.

Safety is a top priority at Edwards and is heavily promoted throughout the year. Various measures, such as the safety flyer handouts and seatbelt checks, have been put into play to encourage workers and residents to be safe and aware of their day-to-day surroundings.

RTS

***HERE YOU GO** — An Air Force officer, right, hands a civilian a safety flyer at the West Gate.*

Demonstrating Social Responsibility

What is SOCIAL RESPONSIBILITY?

Social responsibility is the set of values that shape the way an organization functions. Integrity is its key component.

- It is voluntary.
- It is going above and beyond the day-to-day job duties.
- It is being proactive rather than reactive.
- It involves eliminating irresponsible behavior in an organization and within the community.

Social responsibility is a way of life that we at Environmental Management embrace. It is our job to support the base mission through environmental management, but it is our diligence to share with others about the work we do for the good of nature and the community in which we live. We can't hide our spiritual, physical and community involvement. It's normal. It's more than just being here every day; it's what I expect my employees to do. We owe it to the community to not just take from it, but to give back.

Robert Wood
Director,
95th Air Base Wing
Environmental
Management

Edwards Air Force Base Environmental Management acts as a collective unit of civil servants and contractors working together to demonstrate social responsibility to the base community, communities surrounding the base and to the environment.

In the Workplace

Environmental Management:

- Believes that employee development is the cornerstone of success at Edwards.
- Promotes physical fitness programs and allows employees to use a certain amount of work time for these activities.

Base Fitness Center

- Encourages employees to take advantage of tuition reimbursement programs and training seminars that foster educational augmentation.
- Supports a safe and healthy workforce by protecting the employee not only at work, but at home as well.
- Understands and encourages the Four Dimensions of Wellness campaign which focuses on spiritual, emotional, physical and social wellness.
- Promotes an equal balance between employees' professional and personal aspects of life.
- Embraces diversity, promoting a workplace free from discrimination, hostility and harassment.
- Proudly protects employee rights and functions as an equal opportunity employer.

To the Community

Environmental Management:

- Participates in the building and establishment of the Center of Excellence.
- Teaches at Antelope Valley College.

- Involves the community in the oversight and review of base environmental activities through the Restoration Advisory Board.
- Demonstrates the ability and desire to be a good neighbor by volunteering for:
  - Hospitals
  - Red Cross
  - Girl Scouts and Boys Scouts of America
  - Churches
  - Base tours
  - Tutoring centers
  - Sports leagues
  - Community and regional boards

Center of Excellence

For the Environment

Environmental Management diligently promotes and supports environmental stewardship by:

- Laying the groundwork as an office model for being green through recycling programs for paper, plastics and water and by promoting renewable energy.
- Reducing emissions through efficient monitoring and equipment.
- Establishing exceptional credibility with regulators for protecting the environment.
- Making the skills of exemplary chemists and high-end equipment available at the Base Environmental Analytical Laboratory, or BEAL, to help solve complex chemical issues.
- Exploring new technology to improve cleanup activities.
- Running extensive contamination cleanup, or remediation programs.
- Encouraging employees to use vanpooling and carpooling resources available.
- Establishing and running a state-of-the-art desert tortoise Head Starting Program.

Solar Panel in Dormitory Area

Baby Tortoise in the Head Starting Program

Through Education and Outreach

Environmental Management:

- Seeks to develop leaders at all levels. The Center of Excellence's mentoring and tutoring program is one avenue available for growing future leaders.
- Informs and educates the base community about environmental and safety work and how one can develop a career in these areas at events like Earth Day, Desert Safety Day, Pollution Prevention Week, Salute to Youth and more.
- Promotes efforts that foster obtaining higher levels of understanding for children and adults.
- Assists students with science fair projects and workers serve as science fair judges.
- Publishes the *Report to Stakeholders*, a monthly newsletter that covers environmental and safety issues on base.
- Supports the Mojave Environmental Education Consortium.

Earth Day 2007

Natural process cleans Edwards wastewater

Yesterday's flush waters a tree today

Everyday water users at Edwards Air Force Base probably don't think much about the water that goes down the drain when they flush or wash their dishes, and they don't think about the water used to keep lawns green and trees full of leaves until something starts getting crispy and brown.

Mark Wippler thinks about both all the time. He's the plant manager at the base wastewater treatment plant, and responsible for ensuring conditions at the plant are the best they can be for treating the water.

"The wastewater treatment plant is a living organism," Wippler said. An organism — alive with beneficial bacteria — that cleans up about 600,000 gallons of water a day.

For almost 12 years, bacteria at the base wastewater treatment plant have been busy cleaning up wastewater for reuse as irrigation water for landscaping, and the key is air.

"If you provide a nice home for them, bacteria will thrive," Wippler added. "The main thing is to provide enough air for the bugs."

The water goes through three stages to turn from wastewater to irrigation water.

It first goes through the headworks where a screening process removes rags, sand and other larger items.

The second step is a biological treatment area. A huge propeller keeps the water moving as sludge drops to the bottom. Oils and other scum are skimmed off the top. This leaves a nutrient-rich brown liquor for the bacteria to digest and break down into other compounds.

Mimicking nature, the water moves through a maze of concrete channels Wippler calls an "artificial river." This is where bacteria, energized with air, break down the wastes.

Then the water is pumped to the round clarifiers. Clear water rises to the top and is skimmed off of the half million gallon concrete pool.

This water then goes to the third and final stage, where it is treated with chlorine and other chemicals. These chemicals react with any remaining problem compounds in the water and turn them into solids. These solids are filtered out and the water is pumped out in special purple pipes for use in landscaping in many areas of the base.

"Seventy-five percent of what comes into the plant goes back out," Wippler said.

***READING** — Treatment plant manager Mark Wippler points to a readout for the sensor that detects the oxygen level in the wastewater, or liquor.*

"RIVER" KEEPS ROLLIN'
A liquor of bacteria and nutrients move along through the "artificial river" at the Edwards Wastewater Treatment Plant. Moving the liquor through these concrete channels helps sludge drop to the bottom and cleaner water rise to the top.

RTS

WHAT IS THE DIFFERENCE? *— The photo on the left is what the wastewater treatment plant screen looks like normally. The photo on the right shows the screen after an accidental release of fire-suppression foaming agent into the base sewer system.*

Foam released into base wastewater treatment plant

A fire-supression foaming agent was released into the Edwards waste water treatment plant on Dec. 3, 2007, killing 70 to 90 percent of the bacteria that make the plant work.

The incident occurred with technicians servicing a fire suppression system at a base facility inadvertently released a small quantity of aqueous film.

"When the foam came down, the plant got sick," said Mark Wippler, plant manager.

The film smothered the bacteria, blocking off oxygen. It took about a week for the bacteria to become healthy again. In the meantime, wastewater was diverted to an evaporation pond.

"The plant is designed for biological waste, not industrial waste," Wippler said.

Wippler credits the recent installation of a variable frequency drive for reducing the effect the foam could have had on the plant.

"The bacteria needed more oxygen to deal with the toxic load," he said. "The new drive Environmental Management engineers had installed reacted to the threat and increased the supply of oxygen."

Wippler said base shops should call the Environmental Management office at (661) 277-1401 if hazardous chemicals are accidentally dumped down a drain. "Accidents do happen, equipment fails," Wippler said. "We can mitigate the problem if we know about it."

LANDFILL VISIT
From left, Don Maben, Milton Riley, Larry Knight, Mike Ferola, Gary Schafer, Joe Torres, Larry Carroll, Wanda Deal and Steven Madoski. Maben is the Second District Supervisor for Kern County and made the Dec. 13, 2007 visit to the Edwards landfill to see the bailer operation to consider it for use at facilities under his jurisdiction.

Desert-inspired landscape area beneficial in conserving water

At Environmental Management (EM), biologists continue to study and determine the effects of a living laboratory — EM's desert-inspired landscape area.

Located next to the EM building, biologists are trying to figure out what types of drought-resistant plants will work best in desert conditions, which oftentimes includes harsh winds, weeds and various pests.

The desert-inspired landscape, the Xeriscape™ concept, is also used to educate those that live, work and visit Edwards Air Force Base about water-wise landscaping techniques in desert areas.

In November 2003, 5,000 square feet of lawn was removed to prepare for the installment of the landscape area. "Several different demonstration beds were designed to test what types of plants and material would work best," biologist Amber Bruno said. "The elimination of the lawn alone saves about 236, 000 gallons of water each year."

Five raised demonstration beds were built, each representing a different desert theme of drought-resistant plant species and mulch that allow the biologists to find better solutions for conserving water in the desert.

Placing mulch on some of the demonstration reduced the loss of water, and helped keep moisture in the ground to lessen the amount of irrigation needed.

Some of the plants in the landscape area have also shown success against windy weather conditions like the feather reed grass and fish-hook cactus.

"Plants did better than others for a couple of reasons," Bruno said. "Some of the plants were able to develop stronger roots based on the species and different types of bedding, which is an influential factor on whether the plant [or plants] will survive."

All plants on each demonstration bed have individually adjustable drip systems, according to Bruno, but the plants on the wind break area are on a timed drip system. This allows the biologists to monitor the amount of water used in the study and calculate the amount of water saved each year.

***PART OF THE LANDSCAPE** — This section of the landscape contains recycled gravel. The gravel is used to keep weeds from growing in the landscape area. There are also drought-resistant plants on this particular section of the landscape as well.*

Protecting plants by designing a wind break with mesquite trees or planting in a sheltered location increases the attractiveness of the plants and decreases watering needs.

"The mesquite trees used in the wind break were chosen because they were the closest species found to the native mesquite trees on base. They are also drought-resistant," Bruno said.

Most plants survived in the landscape area. The plants found best suited for the Xeriscaping concept are the Apache plume, Autumn sage, Beavertail cactus, Chitalpa, Texas sage and Desert willow.

Plants that did not survive are being replaced with new species from local nurseries, which are also recommended for drought-resistant landscaping. Plants such as the blue Palo Verde and the Salvia Bee's Bliss are expected to enhance the visual appearance of the area as well as conserve water.

The biologist's goals are to have this study lead the way and inspire other organizations on base and around the community. It is a concept that not only conserves water, but in the long run, saves money, biologists say.

RTS

DID YOU KNOW?

The word Xeriscape™ comes from a combination of two other words: "xeri" derived from the Greek word "xeros" for dry; and "scape," meaning a kind of view or scene. While xeriscape translates to mean "dry scene," in practice xeriscaping simply means landscaping with slow-growing, drought-tolerant plants to conserve water and reduce yard trimmings. To find out more about this method you can visit *www.ciwmb.ca.gov/organics/Xeriscaping/*.

10 TIPS TO SAVE WATER OUTSIDE

1. Avoid over watering

Water your lawn only when it needs it. A good way to see if your lawn needs water is to step on it. If the grass springs back when you move your foot, it doesn't need water. This will save 750-1,500 gallons of water per month.

2. Water in the early morning or late evening

This will prevent water loss from wind and evaporation.

3. Adjust watering times for seasonal changes

During spring and fall you only need to water your lawn one to two times a week.

4. Install drip irrigation wherever possible

Drip irrigation is the most efficient method of watering for nonturf areas such as plant beds, trees or shrubs.

5. Fix leaks right away

Check your irrigation system and every faucet, hose, pipe and coupling around your house for leaks.

6. Avoid runoff

If water is running off your lawn during watering, adjust your sprinkler heads and break up watering times into shorter periods to allow the water to infiltrate into the soil.

7. Place mulch around trees and plants

A 2-inch layer of mulch will slow the evaporation of moisture, reduce runoff, moderate soil temperatures, reduce erosion, slow weed growth, prevent soil compaction, make shrubs and young trees more tolerant to heat and beautify your landscape.

8. Check for broken irrigation lines

Turn your irrigation system on periodically to check for broken sprinkler heads. If you come across an extra soft area while walking through your lawn, you may have a broken irrigation pipe.

9. Don't run the hose while washing your car

Make sure your hose has a shut-off nozzle so that you can easily turn the flow of water on and off as needed instead of simply letting the hose run nonstop. This will save 150 gallons of water each time you wash your car. For a two-car family that's up to 1,200 gallons a month.

10. Take advantage of free water

Collect the water for future use that you would otherwise allow to run down the drain, soak into the ground or evaporate. You can also catch rainwater from your gutters and use it to water your flowers and vegetables.

TYPE OF LANDSCAPE	YEARLY WATER REQUIREMENTS
Newly planted landscape	17 gallons of water per sq. ft.
Mature landscape with 50 percent coverage	22 gallons of water per sq. ft.
Densely planted with 100 percent coverage	25 gallons of water per sq. ft.
Lawn	79 gallons of water per sq. ft.

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: May 2008
Time: 5:30 p.m.
Location: To Be Determined

RAB Members

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