



Edwards Air Force Base
95th Air Base Wing
Environmental Management

Report to **STAKEHOLDERS**

June 2009

Volume 14 No. 6

Graduate students conduct Piute Ponds study

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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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CHECK IT OUT — A couple of teachers take a look at a piece of granite from an outcrop at Edwards Air Force Base. The teachers also received a tour of the yardangs, streamlined, wind eroded, land features carved from strong prevailing winds over many years. The Mojave Environmental Education Consortium workshop was held at the Edwards Air Force Base Environmental Management office in April and covered an earth science and geology curriculum.



What's on the cover?

PIUTE PONDS — Boats sit by a dock at Piute Ponds. The area is known for hunting, birdwatching and tours, among other things. See article on page 4.

For all environmental concerns, please call the Environmental Management Customer Service Desk at (661) 277-1401.



LIGHT STUFF IN — Recycling center worker Gil Galbaldon feeds a piece of foam into the shredding unit on the expanded polystyrene densifier at the Edwards Air Force Base landfill.

Packing peanuts, product packaging problems solved at base landfill

Your new computer delivered today is a pretty nice looking machine. What protected it during its trip from the factory to your office were a big cardboard box and two huge pieces of expanded polystyrene (EPS) foam now sitting on the floor in your office. What do you do with those now?

The cardboard is easy: recycle it. Most offices have a bin for cardboard recycling. But what about the plastic foam? Until recently, your only option was to throw it in the trash. “All that polystyrene went into the dumpster,” said Milt Riley, Edwards Air Force Base qualified recycling program manager.

The plastic foam was taken to the landfill and buried, where it will not break down. The problem was that recycling it made sense from an environmental standpoint, but not from an economic standpoint.

“There’s been a market for recycled polystyrene for years,” said Gary Schafer, a recycling expert at Environmental Management. “The problem at Edwards was that no recycling company could justify the cost of transporting EPS foam to an off-base facility for the price they’d get for it.”

That is because EPS foam is 98 percent air and only 2

percent plastic. It weighs very little, but takes up a lot of space. According to RecycleTech Corp., 98 percent of polystyrene foam packaging ends up in America’s landfills where it takes up 25 to 30 percent of the available space.

With an ever-shrinking amount of landfill space at Edwards, Riley found a solution to the EPS problem. He purchased a new machine that shreds and chips EPS foam and then uses heat and pressure to remove the air and reduce the foam into solid, sausage-shaped chunks. These chunks are collected and sold to a recycler. The recycler sells it to manufacturers who make products ranging from cloth and shoes to CD jewel cases.

The densifier can handle up to 400 pounds of foam an hour. It reduces the material’s size to 1/90th of the original. To visualize that, imagine a basketball-sized piece of EPS foam turning into a chunk of dense plastic a little bigger than a piece of rice.

From activation in December 2008 to mid-February 2009, the base’s machine had produced about a cubic yard of densified polystyrene. That equates to several truckloads of EPS foam.

“The more you can divert materials from the landfill, the

See STYROFOAM, page 7

PIUTE PONDS STUDY

Results surprise UCSB graduate researchers

Tule rushes. Green water. Birds of all kinds. Joshua trees in the distance. Piute Ponds surprises people – it's not what someone would expect to find on a military base in the middle of the Mojave Desert. A group of graduate students from the University of California, Santa Barbara (UCSB) were surprised at the results from a survey they conducted recently researching options for a proposal on the future management of the ponds.

Piute Ponds is 400 acres of manmade aquatic habitat fed by the effluent from the Lancaster Wastewater Reclamation Facility and, occasionally, the flooding of the Amargosa and Littlerock washes

to the south. It is the largest marsh in the Antelope Valley, according to base wildlife experts. The ponds attract lots of birds. A 2004 National Audubon Society study estimated more than 10,000 shorebirds in the summer and 5,000 waterfowl in the winter.

“Piute Ponds is an important migratory bird stopover on the West Coast,” said Mark Hagan, base natural resources manager. “Although access to the ponds is limited, Piute Ponds is also a popular place for school tours, birdwatchers and authorized waterfowl hunters during hunting season.”

Beyond the ponds themselves, minor development in the area includes trails, an

information kiosk, an observation hut and 47 duck blinds.

The graduate students researching the ponds are from the Donald Bren School of Environmental Science and Management at UCSB. Their final project toward their master's degrees is to prepare recommendations for a management plan for Piute Ponds.

“The project interested me because it involved the government and it is on a military base,” said graduate student Julie Randall. Randall has a background in environmental issues on American Indian reservations.

Fellow graduate student Robert Shirley, chief of the conservation division at Envi-

BIRDWATCHING — *A red-winged blackbird sits on some vegetation at Piute Ponds. The ponds are an important migratory bird stopover along the West Coast and a variety of birds can be seen there.*



ronmental Management, proposed the project. “We looked at the current status of the ponds as well as what they could be like in the future,” he said.

The students were particularly interested in the changes that may occur when the Lancaster Wastewater Reclamation facility starts pumping out tertiary-treated water in 2010. That means cleaner water and fewer nutrients will reach the ponds.

“We also expect a reduction in overflows of the ponds,” Shirley said. These overflows onto nearby Rosamond Dry Lake flush the ponds, and improve the health of the ponds by reducing pollutants and increasing dissolved oxygen in the water. “I wonder how these two changes will affect life at the ponds,” Shirley said.

Randall said the group did a lot of research. “We looked at case studies from constructed wetlands near Humboldt [County] and San Jacinto. Those places were similar to Piute Ponds,” she added.

Both the Humboldt County and San Jacinto projects discharge treated wastewater into manmade wetlands. The Humboldt County marsh, called the Arcata Marsh and Wildlife Sanctuary, is visited by more than 150,000 people each year according to their Web site. The marsh has 4.66 miles of trails used by bicyclists and pedestrians and has an interpretive center.

“The research included two trips out to see Piute Ponds,”

Randall said. Her involvement in the project included looking at ways to enhance educational opportunities at the ponds, so one of her trips coincided with a children’s school tour.

The group identified two variables that will affect the future of the ponds: water supply and the budget for managing the ponds. From these, they said the group came up with nine different scenarios and evaluated the five most plausible ones considering the regulatory requirements



STUDENT TOURS — A student peers through his binoculars to see birds, while another student looks on. These students went on a tour of Piute Ponds a few years ago. Tours of the ponds are given by Environmental Management staff every year.

with which the base is required to comply.

“The group evaluated water quantity and quality, ecological health and educational and recreational use of the ponds,” Shirley said.

As part of the project, more than 1,000 surveys were sent to local individuals interested in environmental issues at Edwards Air Force Base. An online survey also was available. Shirley was pleased with the number of responses. “We had almost 140 responses,” he said.

“The group members had initially assumed the public would want the Air Force to manage the area more actively,” Randall said. “We initially tried to come up with ideas for more activities, more trails to expand recreational use.”

When the results from the surveys came back, it wasn’t what they were expecting. “The most interesting thing was the feedback on the surveys,” Shirley said. He said survey respondents liked the ponds the way they are today.

“We had a lot of people thanking the Air Force for providing such a great resource for birdwatchers, hunters and educators,” he said. “Most wanted it to remain the same or only slight improvement.”

“A lot of people like it the way it is,” Randall said. “They like it as a nature preserve.”

Randall said the best thing about the project was that Piute Ponds already exists. “What’s great is that we can actually go out and experience it today,” she said. “There is a lot of potential out there. I’m excited to see what will become of it.”

“Some environmental proposals are difficult to see because they only exist as an idea,” Randall added. “Our project is one of the most applicable to real life. It’s something that is tangible.”

The students presented their project results to the public and the Air Force at the Doubletree Resort in Santa Barbara on April 3. They expect to finish their graduate degrees in June.

“The [graduate research] group evaluated water quantity and quality, ecological health and educational and recreational use of the ponds... The most interesting thing was the feedback on the surveys.

Robert Shirley
Conservation Division Chief
Environmental Management

FUGITIVE EMISSIONS CAPTURED AT EDWARDS

If you have a habit of topping off your vehicle at the gas station, you may run into a snag at the Army, Air Force Exchange Service Car Care Center at Edwards Air Force Base. New upgrades to the vapor recovery system at the center can shut down the pumps when a leak is suspected.

“We had in-station diagnostic equipment installed, making the system more sensitive, especially at the pumps,” said Carl Jenkins, manager at the Car Care Center. “This means we have more detailed monitoring of fuel leak detection and vapor emissions.”

California’s Air Resources Board mandated that gasoline dispensing facilities that pump more than 100,000 gallons per month install enhanced vapor recovery and in-station diagnostic upgrades by February. An enhanced vapor recovery system involves capturing fuel vapors when transferred from delivery truck to tank and pump to vehicle. It also features dripless nozzles, in-station diagnostics, compatibility with vapor recovery systems on newer vehicles and a clean air separator.

“Enhanced vapor recovery systems have a higher efficiency for capturing vapors,” said Elizabeth Rehoreg, air quality coordinator for Environmental Management at



Edwards. “The enhanced vapor recovery system at the Car Care Center is our most complicated vapor recovery system on base because of the volume of fuel delivered and pumped into vehicles.

“The base pumps approximately

3.5 million gallons of gasoline per year, with the Car Care Center and military gas stations being responsible for most of that,” Rehoreg said.

Of the 10 gasoline dispensing facilities on base, the Car Care Center features the only enhanced vapor recovery system. Now with the in-station diagnostics, the base can have greater control of vapor emissions and show its compliance with federal, state and local standards more easily.

SAVE THE CLEAN AIR
The Car Care Center has a clean air separator, left, as a part of the enhanced vapor recovery system, designed to prevent the release of emissions.

“The diagnostic equipment affects how regulators monitor our response to any alarms or shutdowns,” Jenkins said. “Regulators now have easy access to our system. They can plug in a laptop to view any alarms or shutdowns the system may have had up to three years old.”

“Our customers can help by not topping off their vehicles because the hoses and nozzles actually have vapor recovery capabilities,” he continued. “When the system detects a problem it tends to shut down immediately and requires a certified technician to restart it.

BACK IN SERVICE — Vehicles line up at the Car Care Center gas station just hours after it reopened following a few days of closure in February. The station pumps were closed briefly to get in-station diagnostic upgrades added to the enhanced vapor recovery system.



“When customers top off fuel, it is sucked into the vapor system and the computer thinks there is a leak and shuts all fueling down,” Jenkins said. “This also happens when customers pull the hoses across vehicles.”

In addition to delays in getting the fueling back up and running, topping off or pulling hoses across vehicles can cause damage to equipment and increase the amount of gasoline vapors released into the air. These vapors can react with other air pollutants to form ozone and adversely affect air quality.

“There is roughly a 30-day cycle for the computer system to monitor and “learn” our fueling and vapor recovery patterns,” Jenkins said. “There may be some shutdowns during this time. After that, we hope to return to a more standard routine.”

According to the state board’s Enhanced Vapor Recovery Web site, these systems save roughly 120,000 gallons of gasoline per day in California.

Environmental Management employees work with the gasoline dispensing facilities on base to inform them of new board rules or regulations, help with permitting and organize inspections to prove compliance. Every gas station on base has some form of vapor recovery system: four have Phase I systems, which deal with emissions from delivery truck fuel



FILLING UP — Marlene Escobar, a customer at the gas station, fills up her car after upgrades were installed to make the vapor recovery system more sensitive to fuel leaks. If the computer suspects a fuel leak, which sometimes happens when a user tops off, it can shut down the pumps to prevent fuel or fuel vapors from leaking.

loading into underground storage tanks; and the rest have both Phase I and Phase II systems, which deal with emissions from delivery truck loading, as well as pump dispensing into vehicles.

RTS

STYROFOAM

From page 3

longer you can stretch out the life of the base landfill,” said Steve Madoski, solid waste manager at Environmental Management. “Our goal is zero waste which means eventually 100 percent of our industrial and residential byproducts will be recycled, reused, or never created to begin with. In the meantime, anything we can do to reduce what goes into the landfill helps a lot.

Edwards has had an active recycling program for paper, plastic and metal for several years. Green waste is collected and composted onsite as well. The EPS densifier adds to the waste reduction effort.

It costs a lot to close a landfill. Madoski said current estimated costs for the regulatory mandated cleanup and post-closure maintenance tasks are upwards of \$20 million in current-year dollars. “The longer we can use it without closing it, the better,” he said.

For the future, rethinking ideas about waste is important. “We’re reevaluating the way we do things,” Madoski said. “We’re starting to look further upstream



NEARLY SAME VOLUME — Expanded polystyrene before and after it is densified. A block of EPS foam on the left weighs half a pound. The densified polystyrene on the right weighs a little over 8 pounds.

in the supply chain.”

Air Force employees are actively looking for ways to eliminate all waste. “If we can reduce the amount of packaging that a product comes in, it eliminates waste going to the landfill later on.”

Tips for recycling EPS

Dirty polystyrene food containers cannot be accepted for recycling. Please put those in the regular trash.

Foam packing peanuts should be sealed in a plastic bag. If possible, put polystyrene foam into a plastic bag to reduce the possibility of it becoming airborne during pickup.

Base housing residents should place polystyrene foam in their gray recyclables can.

Base workers should put polystyrene foam into white recycling dumpsters or at the cardboard collection point at their building. If the cardboard collection point is outdoors, contact your facility manager for assistance. Polystyrene foam becomes airborne very easily.

Housing residents and base workers also can bring polystyrene foam and any other recyclable materials to the base landfill during regular business hours. The landfill staff will pay the California Redemption Value (CRV) for plastics and metals.

Off-base residents should contact their city or county government about recycling polystyrene in their communities.

For more information about recycling at Edwards, call the landfill at (661) 277-DUMP (3867).

RTS

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.

For general information about Edwards and an electronic version of the latest issue of Report to Stakeholders or other documents of public interest, please visit the following link:

<http://www.edwards.af.mil/library/environment/index.asp>

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Restoration Advisory Board (RAB) Information

The RAB is made up of appointed 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. 20, 2009
Time: 5:30 p.m.
Mojave, Calif.
Venue is to be determined

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