



August 2010

Report to **STAKEHOLDERS**

Volume 15 No. 8

Biologists work to keep weeds from changing landscape

page 4

Edwards community celebrates Earth Day

page 2

412th Maintenance Group reduces battery waste

page 6

Report to Stakeholders is a publication of Edwards Air Force Base, 95th Air Base Wing, Civil Engineer Division, 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.

All photos are property of the Air Force, unless otherwise identified.

Any comments or questions about the contents of the *Report to Stakeholders* may be directed to: Gary Hatch, 95 ABW/PAE, 305 E. Popson Ave., Edwards AFB, CA 93524-8060, (661) 277-4127.

E-mail: 95abw.pae@edwards.af.mil



Commander of the 95th Air Base Wing
Gregory E. Schwab

Base Civil Engineer
James E. Judkins

Chief of Environmental Management
Robert Wood

Section Chief of Environmental Restoration
Ai Duong

Section Chief of Environmental Conservation
Thomas Rademacher

Section Chief of Environmental Quality
Herb Roraback

STAKEHOLDERS STAFF

EDITOR

Vanessa Green

CONTRIBUTORS

Heidi Gesiriech

Patti Kumazawa

Leilani Richardson

Paul Rogers

WHAT'S ON THE COVER?



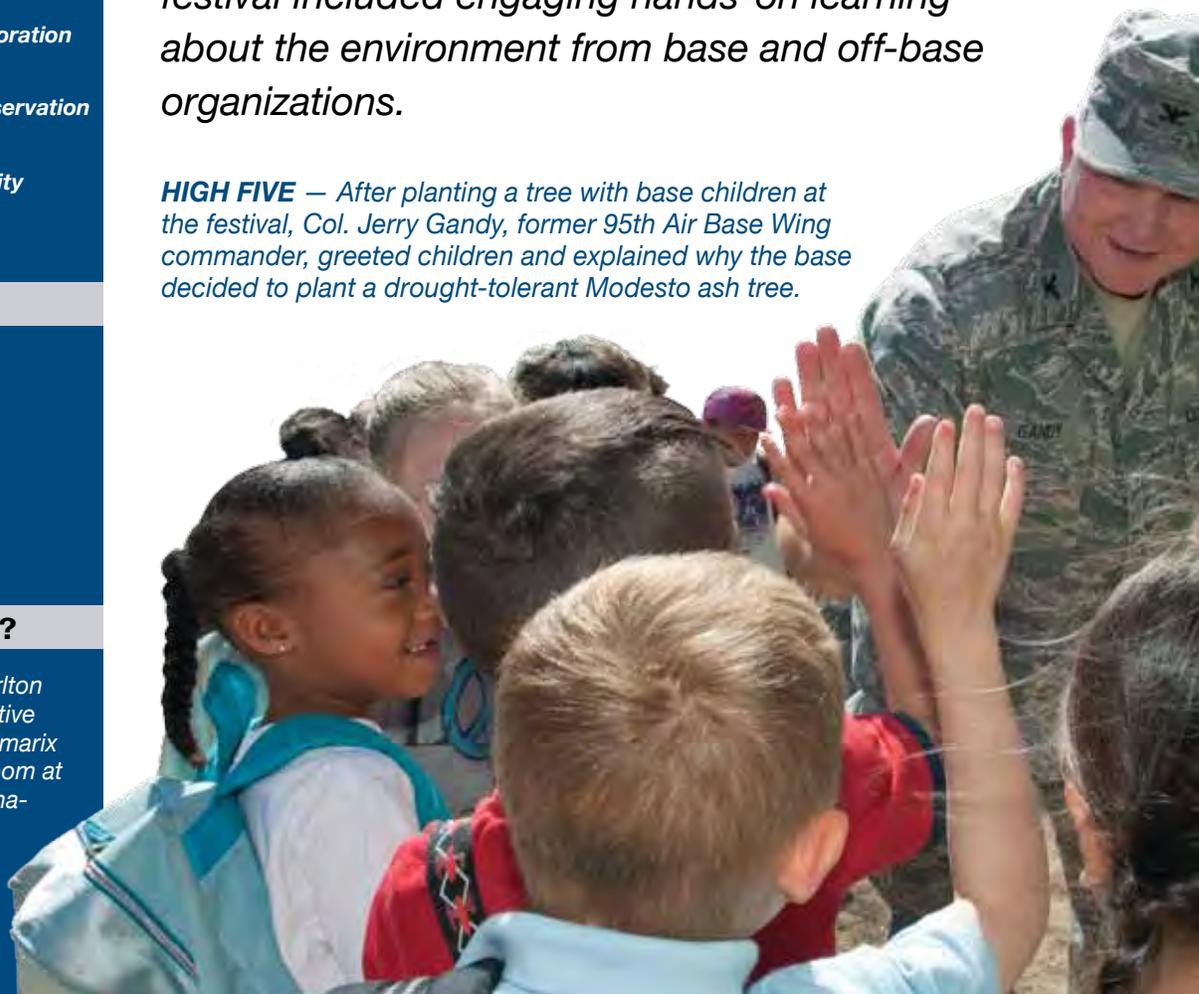
Botanist Dave Charlton examines a non-native salt cedar bush (*Tamarix ramosissima*) in bloom at Piute Ponds. Non-native plants like this one are considered weeds. See article on page 4.

Biologists work to keep weeds from changing landscape at Edwards	4
412th Maintenance Group reduces battery waste by 80 percent	6
Volunteer opportunities at Environmental Management	7
Information	8

Edwards community celebrates Earth Day

Scaly animals and recyclables were only a small part of what Environmental Management's Earth Day celebration involved this year. The four-hour festival included engaging hands-on learning about the environment from base and off-base organizations.

HIGH FIVE — After planting a tree with base children at the festival, Col. Jerry Gandy, former 95th Air Base Wing commander, greeted children and explained why the base decided to plant a drought-tolerant Modesto ash tree.





2010 marked the 40th anniversary of the nation's first Earth Day celebration, and Edwards Air Force Base celebrated the day in style on May 4. The Center of Excellence was brimming with exhibits, activities, demonstrations and music as Environmental Management hosted its annual base-wide event.

"We had more than 50 activities and displays this year, the most ever," said Bob Wood, chief of Environmental Management. "And they all had the same mission in mind — education. Earth Day is all about education."

And learning something new is exactly what happened for 15-year-old Dulce Jung who has attended the Earth Day celebrations at Edwards since 2007.

"I learned the right way to move a desert tortoise if you have to get one out of the road so it won't get hit by a car, and how ancient Indians told stories with cave drawings," Jung said. "I also learned how hard it is to fly an F-22."

Jung was referring to the F-22 Raptor simulator which the 412th Test Engineering Group brought to the event for the first time. Visitors formed a line leading out the door waiting for the opportunity to operate the controls of a simulated fighter jet.

Approximately 2,200 visitors stopped at the various displays set up in eight rooms, the lawn and parking lot of the former middle school grounds. There was something for everyone to look at including solar and wind power, Xeriscaping and pollution prevention displays. There was also information on the use of alternative fuels in aircraft, as well as managing fuel disposal on base. There were presentations from NASA, the

National Park Service and companies that sell environmentally friendly cleaning products and a variety of exhibits on protecting wildlife and preserving land. The Edwards Fire Department, Security Forces, Green Knights, Explosive Ordnance Disposal Squadron, Southern

SCRIBBLE YOUR HEART OUT — Festival attendees fill out raffle cards to win a mountain bike at the Southern California Edison (SCE) mobile education unit. SCE was one of more than 50 displays at Earth Day.



SCIENCE-CREAM — Alison Vasquez (left), a former chemist at Environmental Management, and a volunteer stir up a tasty frozen treat using liquid nitrogen.

California Edison, Robertson's Palmdale Honda, Enterprise, Best Buy and VPSI were a handful of the organizations on hand.

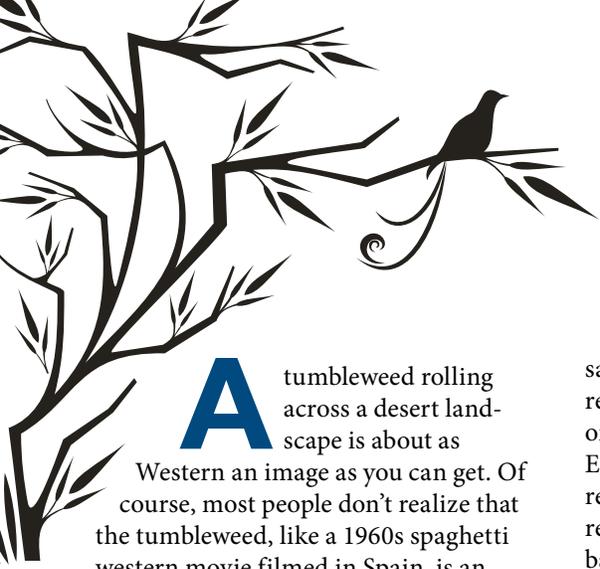
"We were really impressed with how many resources were brought to the event, and how well the exhibitors were provided for," said Wendy Reed, director of the Antelope Valley Conservancy, a nonprofit agency promoting the preservation of native habitats, watersheds, wildlife corridors and regional trails, while encouraging ecoregional planning. This was the second year for the conservancy to participate in the Edwards Earth Day festivities.

"We want our Earth Day celebrations here at Edwards to be something educational and fun for everyone on base, young and old alike," Wood said. "Therefore, adding new resources each year keeps the lessons fresh for all."

RTS



FOOD AND FUN — Approximately 2,200 attendees wandered freely throughout the festival, and were able to visit the booths that they found most interesting.



Biologists work to keep weeds from changing landscape at Edwards

A tumbleweed rolling across a desert landscape is about as Western an image as you can get. Of course, most people don't realize that the tumbleweed, like a 1960s spaghetti western movie filmed in Spain, is an import.

Tumbleweeds, also known as Russian thistle, are originally from Russia. "Researchers have narrowed its arrival in the United States down to two boatloads of wheat brought from Russia in 1901," said Dr. Danny Reinke, a project manager for Environmental Management. "Cowboys riding among the tumbling tumbleweeds never happened, despite what Roy Rogers sings about."

Tumbleweeds, along with about 11 other exotic plant species, are invasive and considered a problem at Edwards. Reinke defines a weed as a plant that is out of place. "In the middle of a corn field, an oak tree can be a weed," he said. The problem with weeds in the desert environment is that they are changing the landscape.

Invasive weeds usually come from Asia or Europe. They were brought to the New World with other plants or seeds, like wheat, or sometimes in the soil and rocks used as ballast in ships. Dave Charlton, a botanist for Environmental Management,

said scientists estimate that one weed, redstem filaree, came to South America on a Spanish ship in 1509. Reinke said European imports including grasses red brome, cheat grass, split grass and redstem filaree can grow anywhere on base, under the right springtime conditions. These weeds push out native wildflowers and annuals.

"They inhibit other plants from germinating," Charlton said. "They also increase the amount of nitrogen in the soil because they absorb air pollution." Increased nitrogen in the soil makes it harder for native plant species to survive because they have adapted to the low nitrogen conditions in desert soils. Native insects will not eat many invasive species and many of them are not nutritious food for the federally threatened desert tortoise.

"Although they can't survive the summers, these weeds do germinate and live long enough to produce seed in the late winter and spring," Charlton said.

Come summer heat and lack of rainfall, these grasses dry out and die. This dead grass can become fuel for wildfires. Wildfire is not normal in the desert environment, so desert natives like the Joshua tree and creosote bush often don't survive. Joshua trees and creosote bushes are very slow growing plants: Joshua trees

take hundreds of years to grow and scientists have identified creosote bush circles in excess of 17,000 years old. Before 1995, wildfires were rare at Edwards. In the past 15 years there have been more than 12.

Wildfires and other invasive weed impacts are on the minds of Environmental Management natural resources employees working in two local weed management areas. They are educating the public and finding ways to better control weeds. The base participates in efforts with the Kern County Weed Management area and the Mojave Weed Management area, based in San Bernardino County. The Mojave Weed Management Area group focuses more on controlling weeds that impact natural desert ecosystems by suppressing native species.

Controlling weeds can be an issue. "Right now the base is concentrating on projects to gather more background information on these species," Reinke said. "The Mojave Desert is so harsh that we don't have the same invasive species problems as other places. We have some time."

Even with time, however, the base is pursuing some control methods. Many people are familiar with the tamarisk tree or athel tree, planted by early settlers throughout the west for use as windbreaks and shade. Many of those 100-year-old trees are still around. "Here at Edwards, it is localized around old homesteads," Reinke said. Although they use up to 300 gallons of water a day, they

SALT CEDAR — *Several non-native salt cedar bushes (center) grow on a sand bar at Piute Ponds. One salt cedar plant can produce 1 million seeds in a single year. They spread in desert washes and displace native species like cottonwood and willow trees.*



don't spread much. However, a close relative of the athel tree, known as salt cedar is more invasive. It has started spreading in washes on base.

Base biologists are considering a project to kill salt cedar that involves releasing salt cedar leaf beetles. The beetle is native to Kazakhstan, where they have evolved to only eat salt cedar leaves. After a few years, their munching can kill a salt cedar plant. Scientists in Utah and Colorado have had success with the beetles.

The only hold-up is that the beetles are working too well. They have spread beyond where they were released into areas further south where an endangered bird is nesting in the trees along river banks. Although the endangered bird doesn't make Edwards a permanent home, the U.S. Fish and Wildlife Service is studying the matter before Edwards can proceed, Reinke said.

Control methods for some other species have met with some success. "Blading roadsides at the right time is effective for one of the two species of tumbleweed we have," Charlton said. Tumbleweeds do best in disturbed soil. At Edwards, tumbleweed is usually found along roadsides. Charlton said another species of tumbleweed is a big problem on one of the targets within the base's bombing range called the Precision Impact Range Area. This tumbleweed snags onto the parachutes dropped there.

And finally, old fashioned weeding works as well. Biologists destroy individual weed plants when they are found. Charlton is monitoring two species that are problems off base: African rue and Sahara mustard. So far, there is not a lot of either of these weeds on base and Edwards biologists want to keep it that way.

According to researchers from the University of Nevada, African rue is a poisonous plant brought in from the Mediterranean by a New Mexican farmer in 1928 looking to produce a new red dye. It grows enormous roots and displaces native species. Charlton has killed several plants here at Edwards.

A more recent arrival to the base, Charlton said, is Sahara mustard that he's found mostly along roadsides. He said scientists think it came to the Indio area with date palms in 1905. It has spread outside the Coachella Valley only in the last 50 years. It grows early in the spring and uses up the moisture in the soil before native species germinate. The Sahara mustard Web page from the Arizona-



Sonora Desert Museum in Tucson, Ariz., reports that in 2005 about 75 percent of the most popular wildflower areas in California and Arizona were covered with Sahara mustard.

Even with the species that are too widespread for weeding, there is some hope. "A two-year drought will set back the weed seed bank," Charlton said. The seed bank is the seeds in the soil that haven't germinated. Since these weeds are not native, they can't deal with the harsher conditions here as well as the native species. Coupling that with the fact that most weeds prosper in disturbed soil and most

BROAD LEAF PEPPERGRASS

— Botanist Dave Charlton surveys a group of broad leaf peppergrass plants at Piute Ponds. Broad leaf peppergrass is a weed that is harmful to native plants in the area.

of Edwards is not disturbed, they haven't spread much beyond disturbed areas. This buys Environmental Management biologists some more time to study what is working elsewhere and find a solution for dealing with the tumbling tumbleweeds.

RTS

412th Maintenance Group reduces battery waste by 80 percent, saves money

It all started with a dead battery. Finding a way to recharge that battery led to a discovery of waste- and cost-saving measures for the 412th Maintenance Group at Edwards Air Force Base.

Resurrecting dead batteries

The 412th Maintenance Group regularly uses aerospace ground equipment — equipment mounted on carts and used to service aircraft whenever necessary— including hydraulic test stands, air compressors, portable light towers, generators, air conditioners and heaters. To power this equipment, they use absorbed glass mat (AGM) batteries, which last longer and cost less to maintain than regular lead-acid batteries. Still with these added benefits, the group was going through a lot of batteries each month because the battery charger they had in the shop didn't work well on AGM batteries.

“We have to power about 800 pieces of equipment,” said Gerardo Herrera, supervisor of the group's mechanics. “Some of the equipment requires two to four batteries. We were going through batteries like crazy.”

Operating conditions for aerospace ground equipment tends to be abusive on batteries; hence, the use of robust AGM batteries. The abusive conditions often cause sulfate crystals to build up on the battery's plates, leading to a high electrical resistance. This resistance then makes the

battery difficult to recharge. The severity of sulfate buildup gets much worse when the battery is accidentally deep discharged, a common occurrence with the ground equipment. Sulfated batteries are often thrown away because of their inability to be recharged.

Herrera researched and suggested the group buy a battery conditioner that uses high amperage electrical pulses to break down the buildup of sulfate crystals on the plates. The conditioner automatically recharges the AGM



CONDITIONER — The 412th Maintenance Group saves thousands of dollars each year in battery purchases by using this conditioner station to condition and recharge absorbed glass mat batteries.

battery once the conditioning is complete. Using this conditioner, the group has seen an 80-percent reduction in battery waste.

“We've been using [the conditioner] for about four or five years now,” Herrera said. “I have noticed we aren't throwing away as many batteries. We used to go through about 20 to 30 batteries a month.”

The conditioner only takes a few hours to fully recharge an AGM battery and plugs directly into a 110-volt wall outlet.

Reducing waste pays off

The cost savings of the battery conditioner is two-fold. The maintenance group now purchases 50-percent fewer batteries and the base saves in terms of battery waste disposal. According to environmental scientist Brian Stone, reducing the base's waste stream is the concept behind the

Edwards Pollution Prevention Program.

“The conditioner doubles the lifetime of the batteries from five years to 10 years,” Stone said. “The latest metric shows the shop disposed of 61 batteries last year.”

“
We used to go through about 20 to 30 batteries a month.
Gerardo Herrera
Supervisor
412th Maintenance Group
”

This is a significant reduction.

“A side benefit to that reduction has been a cost savings to the Air Force,” he said. “So far, they have saved an estimated \$3,326 a year in battery purchases.”

Michael Hanna, an environmental resource specialist for the flightline area, recalls being awed by the benefits of the conditioner. “I first found out about the conditioner during one of my regular visits to the shop,” he said. “I was told the group was buying half as many batteries and throwing away half as many. I thought it was great.”

So did Environmental Management Pollution Prevention program manager Marc Minneci. “The benefits of the conditioner are a no-brainer. It doubles the use of the shop’s batteries and diverts the majority of these batteries out of the waste stream,” he said.

For the maintenance group, the benefits are an unexpected, and welcome, surprise.

“I think that shops are finding that with a little checking, they can find an economical advantage to pollution prevention,” Hanna said. “They may not see the savings on the disposal side, but you see it in the front-end, at the purchasing side. In some cases, you can find that you don’t need to purchase as many of a product or you can find a suitable substitute that costs less.”



PULSE – The battery conditioner uses high amperage pulses to break down sulfate crystals that usually build up on battery plates. Before using the conditioner, batteries with extensive sulfate crystal buildup had to be disposed of as waste. Now, the conditioner prolongs the battery life, saving money and reducing waste.

Spreading the word

Finding a suitable substitute isn’t necessarily easy. Herrera researched online and made several phone calls before he found the battery conditioner, at a cost of \$2,400. According to Herrera, the conditioner paid for itself within the first few weeks of operation.

“At the time, I found out some other bases already used the conditioner,” Herrera said. “I was surprised we didn’t know about this earlier.”

That is one of the reasons Hanna and Stone want to share the pioneering efforts of the maintenance group.

“I want to give people recognition for their efforts,” Hanna said. “By showing others what the maintenance group has done, people will be better informed to make smarter, more economically sound choices.”

And those choices could be staring us in the face. “Sometimes we just need to look around us and see what each of us can do to conserve energy or cut down on waste,” Minneci said.

RTS

(Your name goes here) environmental efforts save money, protect environment

(Edwards Air Force Base employees only)

What is your shop doing to be more environmentally friendly, reduce waste, reuse and recycle? Write us at 95ABW.PAE@edwards.af.mil to have your shop’s efforts possibly featured in a future *Report to Stakeholders*. Please type the following in the subject line, “RTS Topic: Our Environmental Efforts.”

Volunteer Opportunities at Environmental Management

*Interested in learning new skills? Do you need community service hours?
Are you environmentally conscious?*

The Environmental Management Volunteer Program is looking for volunteers with base access. If you are interested, you may contact the Environmental Management Customer Service Desk at: 95abw.cev.customer.service.helpdesk@edwards.af.mil for more information. Or you may obtain an application at <https://bsx.edwards.af.mil>, after clicking on “Edwards Air Force Base - Environmental Management,” and then “Volunteering Opportunities at EM.”

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) 277-4127 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.
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: Wed 11 a.m. – 7 p.m.
Fri-Sat 9 a.m. – 5 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 or other documents of public interest, you may visit the following link:
www.edwards.af.mil/library/environment.

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 the community 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. Those who have questions

or concerns about cleanup activities at Edwards may contact any RAB member or Gary Hatch, Environmental Public Affairs, at (661) 277-4127.

NEXT QUARTERLY MEETING

Date: Aug. 19, 2010
Time: 5:30 p.m.
Location: Rosamond, Calif.
Venue to be determined

RAB Members

OFF-BASE COMMUNITIES

Boron
Julie English (760) 762-6208 Home
brontesisters2003@yahoo.com

California City
Bob Smith (760) 373-4317 Home
bsmith@ccis.com

Lancaster
Peter Zorba (661) 945-6896 Work
pzorba@cityofflancasterca.org
ALTERNATE: Vacant

Mojave
Victor Yaw (661) 824-2886 Home
vicyaw@yahoo.com (661) 275-4296 Work

North Edwards
Vacant

Rosamond
David Newman (661) 722-6433 Work
newmanispwest@yahoo.com
ALTERNATE: Leslie Uhazy (661) 256-8209 Home
luhazy@avc.edu (661) 722-6417 Work

ON-BASE COMMUNITIES

Housing
Vacant

Main Base Air Base Wing
Vacant

Main Base Test Wing
Richard Salazar (661) 275-3275 Work
richard.j.salazar@lmco.com

NASA Dryden
Vacant

North Base
Vacant

South Base
Brenda Weems-Hunter (661) 275-0456 Work
brenda.weems-hunter.ctr@us.af.mil

AF Research Laboratory and Propulsion Directorate
Milton McKay (661) 275-5191 Work
milton.mckay@us.af.mil

Remedial Project Managers

California Department of Toxic Substances Control
Kevin Depies (916) 255-6547 Work
KDepies@dtscc.ca.gov

Edwards AFB
Ai Duong (661) 277-1474 Work
ai.duong@edwards.af.mil

Lahontan Regional Water Quality Control Board
Tim Post (760) 241-4942 Work
tpost@waterboards.ca.gov

U.S. Environmental Protection Agency
James Ricks (415) 972-3023 Work
ricks.james@epa.gov
Joseph Healy (415) 972-3269 Work
healy.joseph@epa.gov

Report to STAKEHOLDERS SUBSCRIPTIONS

- New subscription
- Change of address
- Cancel subscription

Name _____

Organization _____

Address _____

City _____

State _____ Zip _____

Mail to:
95 ABW/PAE
RTS Subscription
305 E. Popson Ave.
Edwards AFB, Calif., 93524-8060



95 ABW/CEV
5 E. Popson Ave., Bldg. 2650A
Edwards AFB, CA 93524-8060
Official Business



ADDRESS SERVICE REQUESTED

Presorted
First Class
U.S. Postage
PAID
Permit No. 294
Tucker, GA