



Report to **STAKEHOLDERS**

May 2009

Volume 14 No. 5

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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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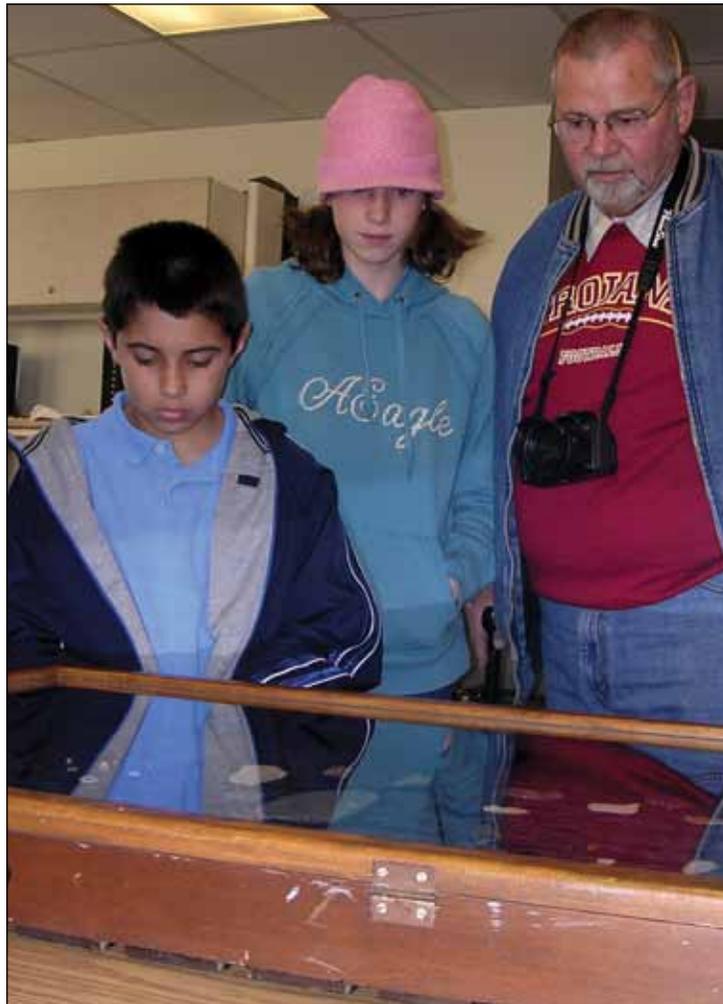
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TAKE A LOOK — A couple of students and a chaperone from Santa Clarita, Calif. check out some artifacts at the Edwards curation facility in January. The students belong to a group called the Tie-dye Tornados, a chapter of the Junior For Inspiration and Recognition of Science and Technology Lego League.



What's on the cover?

PICTOGRAPH ART — A student draws his own pictograph during an open house at Environmental Management. Archaeologists taught students about prehistoric cave drawings, or pictographs.

After the session, the students were allowed to draw their own pictograph. Read article on page 4.

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

Keep track of the air you breathe

People don't have to be scientists to understand whether the air around them is polluted. Now with the U.S. Environmental Protection Agency's Air Quality Index, the public can find out what the air is like in their area, online.

According to the EPA's AIRNow Web site, www.airnow.gov, air conditions are important to know about because they can directly affect a person's quality of life. People with health conditions, like heart disease, lung disease or other respiratory problems can use the index to find out when air conditions could potentially be harmful for them.

The Air Quality Index displays air quality conditions throughout the day and even features an air quality forecast for five major air contaminants regulated by the *Clean Air Act*: ground-level ozone, particle pollution, carbon monoxide, sulfur dioxide and nitrogen dioxide. Of the five contaminants regulated, ground-level ozone and particle pollution are the ones that pose the greatest threat to human health and are usually the pollutants noted, if any.

Air quality scientists determine which pollutants have the potential for creating health problems and report the levels of those contaminants that actually create health problems for which groups of people.

What does the Air Quality Index look like?

The idea behind the index is to make air quality information simple and easy to read for the public. The index displays six levels for each contaminant as a number value and color. It also includes cautionary statements that explain each level's potential health concerns. The levels range from good to hazardous even though most U.S. communities experience index values of good to moderate throughout the year, according to the EPA.

Some newspapers or television channels display the index information by highlighting the contaminant of concern, if there is one, which groups of people could



AIR QUALITY INDEX

Air Quality Index (AQI) Values	Levels of Health Concern
0 - 50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301 to 500	Hazardous

The Air Quality Index featured here is used courtesy of the U.S. Environmental Protection Agency's Web site, airnow.gov.

be affected by the pollutant and what the number and color value is for the day.

Why is the Air Quality Index important?

Many air pollutants are invisible to the naked eye, but if inhaled into the lungs at elevated levels, they can cause serious health problems. These can range from having trouble breathing to reducing levels of oxygen in one's body.

People with heart or respiratory conditions, or those who are often outside during the day, can be exposed to health risks at different pollution levels. Knowing when their health may be affected by air quality conditions can be a lifesaver.

"The Air Quality Index is a good indicator of how you should take care of yourself and monitor your activities, if pollution levels are at a level which could pose a health hazard," said Robin Liggett, an air quality specialist at Environmental Management.

What is the air quality like on base?

Environmental Management air quality specialists operate the base's air

monitoring station and although the data is not featured in the Air Quality Index for the area, Liggett said that the air quality on base is the same as in other cities of the Antelope Valley.

"There's so little traffic and no power plants that would pollute the air," Liggett said. "The air quality is always good out here."

"There are a few days in summer when it is at a moderate level, but for the most part, the air quality is pretty good. There's just so much space out here for pollutants to dissipate," she said.

Where can you go for more information about air conditions in your area?

The AIRNow Web site features an option where users can type in their zip code or city and pull up index information on the air quality in the area. Liggett said that Lancaster's conditions will be similar to what people will experience on base, and they could use that as a reference point.

"If they want to be scientific about it, they could go to the Edwards weather site and look at the temperature of the day, and sunlight, cloud and wind ratings," Liggett said. "High temperatures, high winds and a lot of sunlight can be factors of ozone accumulation and that's going to create an environment for poor air quality."

Here are some tips from the AIRNow Web site for keeping air quality good in your area:

- Car pool
- Burn only dry, seasoned wood
- Combine errands to reduce cold starts of your car
- Conserve electricity
- Stop pumping gas when the pump shuts off
- Use environmentally safe paints and cleaning products

The Edwards weather site is located at <https://bsx.edwards.af.mil/weather/indexa.html>. For more information about the Air Quality Index or for tips on keeping air quality good, you may visit airnow.gov.



PETROGLYPHS — A student from Galileo Academy in Victorville, Calif., above, is shown finishing up a drawing to resemble those done by prehistoric people. There is one prehistoric cave drawing site on base called Ettinger Cave.



DRY SKIN — The student, above, examines a live snake and its recently shed dead skin.

ACIDS AND BASES — This student, left, uses a dropper to release a household chemical into a vial. The color of the mixture demonstrates the pH level of the substance.

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Students provide answers

group of 54 third, fourth and fifth grade students, crowded onto an open spot surrounded by taxidermic skulls, live venomous snakes and hissing liquid nitrogen.

roles, the presenter engaged the eager students and quickly shot up to provide

ts spent the next few minutes talking with experts in a variety of scientific disciplines and participating in hands-on

Environmental Management Consortium (MEEC) and several that the Environmental Management office at Edwards Air Force Base opens its doors each year. The goal is to engage young minds and encourage them to explore environmental careers.

is in the polling. "We've had a number of field trips this school year, including to the base," said Paul Longshore, historic preservation officer at Galileo Academy, Calif. "We spotted black whales, but I asked the students and they are enjoying the experience."

like working with scientists to have careers they might want to pursue in pursuing," he said. Ruggles, the base

historic preservation officer and presenter for this in-house tour, introduced some of the environmental projects going on at Edwards. He gave age-appropriate, everyday examples to illustrate how the Environmental Management workers are cleaning up past contamination, protecting animals and supporting the Air Force mission. After a few minutes, he dismissed the students to visit the demonstrations set up around the room.

The demonstrations included: pH testing, where students were able to play with different household acids and bases; liquid nitrogen, where chemists chilled a creamy mix into ice cream; and geographic information systems, where students took on roles as engineers, biologists, archaeologists and geologists in planning and executing a mock project. In addition, there was a cave drawing area, where students learned about prehistoric ways of communicating, and a natural resource awareness table, where students were able to look at live desert critters in terrariums and touch taxidermic, or stuffed, desert animals.

"I liked the variety all of my students had in looking at future careers," Longshore said. "I asked my students which table was their favorite, and was surprised that only about a fifth of them picked the liquid

nitrogen ice cream table as their favorite."

"I have some students who are interested in maps, others that like animals...it's great that they have an opportunity to explore what they are interested in," Longshore said.

Longshore submitted a grant proposal for the tour with MEEC — a group that links local teachers with environmental education resources. Crystal Kerns, a fifth grade teacher at Galileo Academy, reviewed his proposal and he invited her class to come along.

"We're just finishing up our life science study and the students can tie some of the things we learned with what's going on here," Kerns said. "These are GATE [Gifted and Talented Education program] students and they are always full of questions. It's nice to have people who can answer the questions here."

The students spent a few hours visiting the stations, talking to the exhibitors about their jobs and enjoying the day away from their classroom desks.

Katherine Leggiero, an archaeologist at Environmental Management, thought of introducing a session on cave drawings for this tour and said the students benefited from having the tactile interaction to reinforce the information they learned about archaeology.

"Helping the students discover and tap into their interests within the sciences should be the constant theme for these tours," Leggiero said. "The approach we take as presenters should always vary to keep our presentations fresh and the passion for our work evident in what we present to the tour groups."

Environmental Management coordinates with the consortium to open up the office for demonstrations, which usually occur in the late winter and early spring.

"I think the tour was fantastic," said Heidi Gesiriech, community relations supervisor at EM. "I received comments from the teachers, parents and students that they really enjoyed the various aspects of the tour."

"Paul [Longshore] commented that he was surprised how many staff members were not only experts in their scientific fields, but also were engaging with the students and able to talk to them on their level and have fun," Gesiriech said.

Groups interested in setting up tours at Environmental Management, may contact Gary Hatch, the chief of environmental public affairs at (661) 277-1454. Environmental Management hosts a variety of different tours, including Piute Ponds, wildflowers and in-house demonstration tours.

RTS

PULL UP A SPOT OF CARPET — The Galileo Academy students visiting Environmental Management sit attentively as Dr. David Ruggles, the base historic preservation officer, tells them about environmental work being done at Edwards.





LABELING —

Archaeologists can find useful dating information from a label such as this one. They can compare the label to photos of collector-quality beer cans and use the information to help date a site or other objects found near the cans.

Test Your Beer IQ

- 1. True or false:** Krueger's Special Beer was the first beer to be featured in a can.
- 2. True or false:** The production of beer in cans started before the production of beer in bottles.
- 3. True or false:** The process of canning started in 1809 as a way to preserve food for the French army and navy.
- 4. True or false:** Pull tabs debuted in a test market without instructions and caused many lip and finger injuries.

Answers: 1) True, 2) False, 3) True, 4) True

Canning his

When can manufacturing companies and breweries teamed up to market a can that could hold beer, they may not have known those cans would someday become valuable collectors' items and provide archaeologists with help in dating sites. On base, beer cans are found at many sites and archaeologists use those suds containers, and other artifacts, to learn about the people who lived here years and years ago.

"In spite of the fact that beer cans are garbage, they're useful," said Barry Boyer, an archaeologist at Edwards. "Waste items, like beer cans, are able to give us information that history books sometimes leave out."

"The social lives people carried out are sometimes just as important as their professional lives," he continued, "it gives us a more rounded picture about what life was like in their time."

During a site exploration, Boyer and other archaeologists found a refuse pile full of beer cans from what Boyer believes could be the 1940s. Beer cans were first



story with a little malt and hops

introduced in Virginia only five years earlier, meaning that even the base area was taken by the beer can marketing explosion.

“One part of archaeology is getting a general idea of when a site or artifact dates back to, and then comparing that information with information in old catalogs or collectors’ books,” Boyer said.

Beer Can Collectors of America’s *United States Beer Cans* is an example of a catalog resource that archaeologists use when looking to date cans. The book contains thousands of photos of beer cans throughout the years. Labels, shapes and sizes changed in attempts to distinguish their beer from others.

“Can and brewing companies wanted to make their cans unique and identifiable,” Boyer said. “The companies wanted people to be able to pick out their beer can without having to know how to read, as some couldn’t.”

This marketing and

packaging challenge led to a flurry of different-styled cans manufactured from the mid-1930s through the 1960s. Some can types were: the flat top, cone top, “crown-tainer,” pull tab, the six-ouncer, 11-ouncer, pints, quarts, gallons and more.

Base archaeologists are able to take a can, look at the shape, size and in some instances, the label, and determine the years in which the type of can was made. They can take that information and tie it with other facts that they know about the area and fill in more pieces of the puzzle to tell the story of the base’s history.

For instance, there is a site that archaeologists think may have been an area where alcohol was made, and near it, there is another site that is thought to have been a place where alcohol was consumed recreationally. The beer cans and other alcohol containers reveal possible exchanges that may have occurred between travelers and local residents who purchased or traded alcoholic beverages and other goods.

Archaeologists are looking for information on how people interacted and how life

has changed from era to era, up until the present. They date beer cans mainly to assist in the dating of a site.

“One of my favorite parts about archaeology is the story that comes out of it, not just the artifacts,” Boyer said. “We can see how groups interacted and how culture developed.”



RTS

CAN FIND — Archaeologists Erica Maier and Barry Boyer found a collection of beer cans at a site they excavated in 2007. They used the can shape information and were able to learn about the site’s estimated time of use — sometime in the 1940s.

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>.

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.
Location: Mojave, Calif.
Venue is to be determined

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