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AZP3 Charter News

The State of Arizona and Department of Defense installations have come together to form a new pollution prevention partnership.

The partnership **vision** is to ensure environmental excellence through pollution prevention. Arizona Department of Defense installations will continue to sustain and improve environmental quality, conserve resources, and enhance mission readiness.

The **mission** is to promote mission readiness and facilitate pollution prevention innovation and information exchange.

The **goals** are to:

- Identify opportunities and exchange techniques to conserve resources and achieve common goals;
- Promote pollution prevention by exploring and identifying opportunities that provide solutions to environmental issues;
- Foster a spirit of cooperation through site visits, open dialogue, and information exchange;
- Encourage continuous improvement through innovation; and
- Achieve compliance through pollution prevention.

U.S. Army

Fort Huachuca, Arizona, has what is commonly referred to as the scrap lumber pile where homeowners can salvage firewood. Occasionally, items end up there that are not suitable for home firewood use, like cable spools and pallets.



Pallets burn great, but cutting them apart to fit into the fireplace can be a real chore. For this reason, the pile tends to increase in size, and we occasionally have to take a more direct approach in disposal.

We contract for a tub grinder to be brought to the site and grind the scrap into wood chips.



A tub grinder can handle the items that a normal wood chipper can't, like pallets with nails left in, cable spools with the iron reinforcements, and telephone poles with climbing rods.

The wood chips can be used for landscaping and small erosion control, but this time we tried something new. We are using the chips as paving for a nature trail. The first step is to construct the trail...



then fill it in with wood chips.



We relied on free labor from the local explorer scout group. Unless you look closely, it looks like the usual forest litter.

Yuma Proving Grounds (YPG) is an environmentally proactive installation. We have placed a high priority on the tracking and control of hazardous materials.

YPG's Hazmart was put into operation for the purpose of receiving, issuing, tracking and reporting hazardous materials using the Hazardous Substance Management System (HSMS). Hazardous materials disposal is in accordance with the Resource Conservation and Recovery Act (RCRA).

Hazmart was in the initial operational capability stage with selected activities. On 1 October 2001 they were in full operational capabilities procuring hazardous materials for all YPG customers and users. On 1 January 2002 Hazmart became fully operational for environmental HSMS reporting. All YPG users were completely inventoried and converted to Hazmart customers. YPG manages 1,544 line items including 1,129 active documents.

YPG Hazmart has significantly cut the amount of hazardous waste, thus avoiding the considerable costs associated with waste disposal. Hazmart controls excess stock, maintains a comprehensive shelf-life management program and redistributes excess serviceable materials. YPG has reduced hazardous waste disposal with the aid of automation and improved business practices.

Pollution prevention is good business. All hazardous waste is now managed through the Hazmart 90 day accumulation point. The installation Hazardous Waste Storage Facility will no longer be required and we are submitting our closure plan to the Arizona Department of Environmental Quality.

Arizona Army National Guard

- **Ecobuilding.** We have a 5,200 square foot office building that is completely self-sustaining. The building uses systems within its footprint to generate electricity from the sun, collects and stores rainwater that falls on the roof for use within the structure, design and materials to reduce heat gain, and natural lighting to reduce electrical demand. Additionally, the majority of the building's materials are recycled.
- **Combined Service Maintenance Shop.** The building consists of many systems that reduce waste. Some of the P2 systems include: bulk product dispensing; pneumatic collection systems for oil and antifreeze; high pressure water blast system for striping paint from equipment and vehicles with closed loop waste collection systems; recycling wash rack and oil-water separator; hot water parts washer; and many other design features to reduce impact spills.
- **Development of a comprehensive pollution prevention plan.**

- Recycling wash racks.
- Economical statewide antifreeze recycling.

U.S. Marine Corps

- We've acquired 44 electric vehicles. These vehicles will reduce our gasoline consumption by 5,280 gallons and our oil use by 385 quarts annually. Using electric vehicles will also reduce our air emissions and used oil waste.

- We've acquired 72 two drum and four drum containment pallets. Additionally, we've purchased a number of storage buildings with secondary containment. We anticipate that these buildings will reduce the potential for spills therefore reducing costly cleanup.

- We've replaced our PD-680 weapons cleaning system with the IT-48WC weapons cleaning system. Using the IT-48WC system with it's Edge Tek filtration system will extend the life of the breakthrough solvent three to five times. Some of our installations have reduced this waste stream by as much as 99%.

- We've completed a project that includes the installation of day lighting systems in seven buildings. Automatic light controlling devices were installed to prevent lights from being turned on when adequate lighting levels were present.

- Cannon Air Defense Complex lighting retrofit. This project included retrofit of fluorescent lighting with T-8 technology, electronic ballast, T-8 lamp holders and reflectors. With the use of reflectors and the T-8 lamps the four lamp fixtures were replaced with two lamp fixtures thus reducing energy consumption.

- We've used construction and demolition debris on 14 miles of airfield perimeter dirt roads as dust abatement.

Arizona Department of Environmental Quality (ADEQ)

Many people do not know that pollution prevention is an Arizona state policy. Our policy requires that we reduce the generation of hazardous waste, the use of toxic substances, and the release of pollutants to the environment to the maximum extent possible. The policy also encourages pollution prevention whenever technically and economically practicable.

Therefore, the mission of the ADEQ pollution prevention program is to protect public health and the environment, to eliminate or reduce hazardous waste generation, and reduce toxic substance use.

The department's pollution prevention program has reduced waste and emissions over a billion pounds since 1991, a very successful program.

Additionally, the program has saved Arizona businesses thousands of dollars, reduced the regulatory burden for agencies and businesses that have achieved significant P2 implementation and improved both public health and the environment. While this program is located in the Waste Programs Division, it is more accurately described as a multimedia program, addressing hazardous materials releases to air and water in addition to solid waste issues.

Pollution prevention fits in with other concepts of environmental management practices on a kind of staircase. The various concepts make up the steps. Practices higher up the staircase include the concepts below, and add additional elements of scope and complexity.

Arizona's pollution prevention programs and initiatives have reduced public exposure, and the environment, to health and safety hazards.

Table 1 displays the reduction of waste, materials, and resources.

Table 1 shows that during 1991 through 2000, a total of 2.93 billion of pounds of wastes and resources have been reduced by the 217 regulated facilities. Of this total, reduction in water use was 690 million pounds. This represents 23.53% of the total reduction. The reduction in wastewater was 2.03 billion pounds which represents 69.14% of the total. The remaining 7.33%, or 215 million pounds, represents the quantity of wastes and materials reduced.

The table also shows that the use of 3.09 million kilowatts of electricity has been avoided. With a baseline quantity of 37.41 million kilowatts, the rate of energy use reduction is 8.26%. Similarly, with a baseline quantity of 10.18 billion pounds, the rate of reduction for wastes and material is 28.83%.

Table 1 - Reduction of Wastes, Materials, and Resources Ranked by Quantity Reduced.

No.	Waste, Material, Resources	Baseline Quantity (pounds)	Quantity Reduced (pounds)	Reduction from Total
1	Wastewater	6,230,722,699	2,030,951,791	69.1462%
2	Water	3,328,813,976	690,924,296	23.5233%
3	Hazardous Materials & Wastes	133,335,043	103,455,270	3.5222%
4	Corrosive Materials & Wastes	333,727,216	58,009,384	1.9750%
5	Solid Materials & Wastes	96,731,092	27,044,292	0.9207%
6	Ignitable Materials & Wastes	37,069,559	17,171,106	0.5846%
7	Toxic Materials & Wastes	20,229,102	6,961,208	0.2370%
8	Oils & Used Oils	3,163,842	2,302,818	0.0784%
9	Reactive Materials & Wastes	474,883	187,343	0.0063%
10	PCB	179,564	133,633	0.0045%
11	Antifreeze	58,651	40,829	0.0013%
	Total	10,184,505,627	2,937,181,959	100.000%
	Note: Energy	37,418,538 kwh	3,092,122 kwh	

Among various categories of wastes and materials, hazardous materials and wastes (unspecified) represents the group with the highest reduction rate, i.e., 77.59%. This is shown in Table 2. Unspecified hazardous materials and wastes include, for example, laboratory packs or mixtures of chemicals with different hazard characteristics (i.e., ignitability,

reactivity, corrosives, toxicity).

The next categories ranked high in the table are PCB, 74.41%, oils and used oils, 72.78%, and antifreeze, 69.61%. The group of ignitable materials and wastes achieves 46.32% reduction rate, followed by reactives, 39.45% toxics, 34.41%, wastewater, 32.59%, solid waste, 27.95%, and corrosives, 17.38%.

Table 2- Reduction of Wastes, Materials, and Resources Ranked by Percent of Reduction from Baseline.

No.	Waste, Material, Resources	Baseline Quantity (pounds)	Quantity Reduced (pounds)	Percent Reduction
1	Hazardous Materials & Wastes	133,335,043	103,455,270	77.5904
2	PCB	179,564	133,622	74.4146
3	Oils & Used Oils	3,163,842	2,302,818	72.7854
4	Antifreeze	58,651	40,829	69.6134
5	Ignitable Materials & Wastes	37,069,559	17,171,106	46.3213
6	Reactive Materials & Wastes	474,883	187,343	39.4503
7	Toxic Materials & Wastes	20,229,102	6,961,208	34.4118
8	Wastewater	6,230,722,699	2,030,951,791	32.5957
9	Solid Materials & Wastes	96,731,092	27,044,292	27.9582
10	Water	3,328,813,976	690,924,296	20.7558
11	Corrosive Materials & Wastes	333,727,216	58,009,384	17.3822
12	Energy	37,418,538 kwh	3,092,122 kwh	8.2636

U.S. Air Force

Military Partnership Members Win Governor's Pride Awards

Raytheon Company wins Pollution Prevention Award and Davis-Monthan AFB Wins Recycling Award

Arizona Clean & Beautiful hosted the 12th Annual Governor's Pride in Arizona Awards Conference in Scottsdale, Arizona on November 16, 2001 at the Orange Tree Golf Resort.

The conference featured educational workshops, demonstrations, and exhibits related to Arizona's environmental issues. Individuals, businesses, government agencies, and organizations statewide were recognized for their efforts and achievements in improving Arizona's quality of life.

The Arizona Department of Environmental Quality was a sponsor for this event and also participates in the

Arizona Military Partnership for Pollution Prevention. Two members of this partnership, Raytheon Company and Davis-Monthan AFB, won awards.

***Pollution Prevention Award Winner
Raytheon Company***

Cleaning and degreasing components during the manufacturing process is a constant need in the electronics industry. At Raytheon, where missile flight hardware is manufactured, reliability is critical. This plant is owned by the Air Force and operated by Raytheon Company. Both the Air Force and Raytheon Company are committed to pollution prevention.

Previously, a solvent degreaser that released as much as 10 tons of volatile organic pollutants annually was used to degrease parts during the production process. This solvent had a high replacement cost, was inefficient, and took up a lot of valuable workspace.

A proposal was accepted to change to an aqueous cleaner. This benefited Raytheon and the environment in a number of ways:

- Lowered maintenance cost.
- Removed 10 tons of volatile organic emissions a year.
- Increased efficiency.
- Eliminated the need to isolate component cleaning from the main manufacturing area.

This Six Sigma process is one that draws on all disciplines, examines every

alternative, formally measures trade-offs, allows no trial and error, and reaches conclusions in an orderly and structured way. In this case, it saved \$18,000 a year and improved the environment and manufacturing process.

For more information, call (520) 794-0446.

***Recycling Honorable Mention
Davis-Monthan Air Force Base***

Davis-Monthan Air Force Base in Tucson has a population approaching 11,000 and occupies more than 10,000 acres of the Sonoran Desert. In this small city, industrial, commercial and residential activities produce between 8,000 and 9,000 tons of solid waste a year.

The base goal is to recycle 40% of the solid waste stream by the Year 2005. In the last 12 months, the base generated 8,636 tons of solid waste and recycled 3,394 tons for a waste diversion rate of about 39%. The base has virtually achieved its recycling goal nearly four years ahead of schedule.

The base program also includes:

- Curbside collection contract with the City of Tucson.
- Salvation Army drop-off trailer on the base.
- Green waste recycling at no cost to the base.

- Sustainability by using excess earnings to buy recycling equipment and fund support programs.
- Donations of clothes, toys, and bedding to charities plus winter bedding for the homeless.

For more information, call (520) 228-5897.

U.S. Air Force, 161st Air Refueling Wing Initiatives

- Used an oil analyzer to extend the period of required oil changes for our government vehicles.
- Obtained a rag contract to recycle and reduce solvent contaminated paper rag waste.
- Used drainage racks for oil filters to recycle oil and metal portion of filters.
- Collected and reused JP-8 fuel for AGE equipment.
- Battery Management Program--We exchange vehicle batteries with a local

vendor on a one for one basis or we dispose of batteries as universal waste.

Air National Guard, 162nd Fighter Wing Initiatives

- Fuel filter recycling. We found a company that will recycle our used fuel filters. As a result, we reduced our solid waste disposal volume.
- Cadmium. We installed a wastewater recycler in our support equipment shop to eliminate the release of cadmium tainted water into the public wastewater system. We have removed the oil/water separator from the system and eliminated the potential for cadmium water releases.
- Wastewater. We are eliminating 5-6 oil/water separators from our permit. We will be able to do this because our maintenance personnel no longer hose down the large hanger floors into the separators when they are cleaning. Instead, we have purchased self-contained machines that clean the floor and recovers the residue.

Articles in this newsletter were contributed by members of the Arizona Pollution Prevention Partnership. This partnership includes representatives of the Department of Defense and the State of Arizona. The views and opinions expressed in this publication are not necessarily those of the Department of Defense or the State of Arizona. All inquiries should be addressed to the NFESC Environmental Quality Division Director, Naval Facilities Engineering Service Center. Telephone DSN: 551-2638, (805) 982-2638.