



THE POWER TO MAKE IT HAPPEN<sup>SM</sup>

# MANUFACTURED GAS PLANT NEWSLETTER

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## *101,000 Tons of Soil Moved*

### CONTAMINATION CLEAN UP ENDS AND NEW PARK OPENS



*An official ribbon-cutting opened the new recreation area at the MGP clean up site. Left to right are: Prescott City Councilman Dick Cooper, Judy Heywood, APS Environmental Consultant who supervised the clean up project, and Ed Fox, Pinnacle West Capital Corporation Vice President-Communications, Environment and Safety.*

### APS AND COMMUNITY CELEBRATION INTRODUCES NEW RECREATION AREA

A ribbon-cutting, congratulatory speeches and entertainment on April 28 officially opened the new City of Prescott recreation area at the downtown site once contaminated by residue from an old manufactured gas plant.

The recreation area is just east of the APS substation and warehouse on North Granite Street and it adjoins Montezuma Street across from Granite Creek Park.

Known as West Granite Creek Park, the area is the cornerstone of Prescott's "Downtown Greenway Trail System" linking neighborhoods, schools, work places and parks.

"This excellent addition to the community is the result of a year-long effort to return an area that has gone unused for

years. We thank everyone who cooperated in this project," said Ed Fox, Pinnacle West Capital Corporation Vice President-Communications, Environment and Safety.

Fox added that the Prescott project is another addition to the APS list of successful environmental programs.

Prescott City Councilman Dick Cooper, a retired engineer, said he observed the remediation program from start to finish and was impressed with the company's considerations for safety, environmental protection, and minimizing the impact on area residents and businesses.

Arizona Public Service Company (APS) has successfully completed its clean up of the contaminated site near downtown Prescott and a new park area is now open. Approximately 101,000 tons of soil was excavated and replaced with clean fill dirt during the one-year project, which was conducted under the Voluntary Remediation Program of the Arizona Department of Environmental Quality (ADEQ).

The three-acre area, located on North Granite Street near the APS substation and warehouse, contained soil, surface water, and groundwater that had been contaminated by residue left behind by a manufactured gas plant (MGP) operation that was discontinued about 50 years ago. A predecessor of APS had operated the plant.

The project was supervised by Judy Heywood, an APS environmental consultant in the Corporate Environmental, Health and Safety Department. Day-to-day APS service operations in the area are managed by Larry L. Watson, manager of the APS Northwest Division.

Excavation of contaminated soil, placement of clean fill dirt, and trucking operations were carried out by Fann Contracting

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## FROM THIS . . .



*Excavation required skilled heavy equipment operators trained to work under stringent safety standards.*



*Air sampling was done continuously to ensure the safety of workers and residents.*

## TO THIS . . .



*People took to the trails even before they were officially opened.*



*The new trail system and recreation area on city property connect neighborhoods with Prescott's downtown.*

# THE CLEAN UP EFFORT

The soil excavation and remediation work involved the eastern half of the APS service center at North Granite Street near downtown, as well as part of the City of Prescott land just east of the site, and property on the north side of the nearby Prescott College facility. The highest health and safety standards were implemented throughout the project.

The excavation work, which was divided into six areas and conducted in phases, was done to maximum depths of about 25 feet, with the average depth being approximately 12 feet.

Miller Creek was diverted during the project under a permit from the U.S. Army Corps of Engineers, and the creek has now been successfully returned to its normal flow.

As each area was excavated, soil was temporarily stockpiled and then transported offsite for treatment or disposal.

Most of the contaminated soil was treated as "special waste" and transported to a permitted treatment facility near Vicksburg about 200



*The creek flowing alongside the APS substation was protected throughout the contamination clean up project.*

miles west of Phoenix. A small amount of soil found to have higher levels of contamination was handled as "hazardous waste" and transported to a permitted out-of-state facility.

With APS coordinating with the City of Prescott to minimize traffic impacts, the soil was removed from the site in large covered trucks.

APS took special precautions to prevent dust. Air monitoring occurred continuously to ensure there were no effects beyond the excavation site. The air monitoring instruments provided instantaneous

readings and could detect excess dust or other contaminants in the air which might have occurred when the MGP material was exposed. Air samples were also collected and sent to a laboratory for further back-up analysis. Some of the material smelled like mothballs, so an odor-suppressing spray foam and other measures were used to control dust and odors whenever necessary.

Excavated areas where contaminated soil was removed were re-filled with clean soil from the Willow Lake area.

It was then that development began for the recreational area on City of Prescott property east of the site. Recreation area planning was coordinated by the City of Prescott departments, the City's West Granite Creek Park Master Plan Committee, APS officials, area residents, and various environmental groups.



*Site revegetation and development of trails started during winter, assuring completion for springtime.*

## NEED MORE INFORMATION?

If you have questions or comments about the APS project, please call (520) 776-3657.

## CONTAMINATION CLEAN UP ENDS, NEW PARK OPENS

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Inc., of Prescott. CH2M Hill, an environmental engineering firm, provided construction, design and oversight on the project. Contaminated soil was transported out of town and treated at permitted facilities.

Following environmental studies, various strategies for the clean up project were analyzed and considered. APS environmental experts determined that the best method was the one known as "ex-situ treatment", which meant removing contaminated soil from the ground and treating it off-site, thus resulting in the complete removal of contamination and the source of groundwater and surface water impacts. The Remedial Action Plan for the excavation of the impacted soil was approved by the Arizona Department of Environmental Quality, Voluntary Remediation Program.

A comprehensive community relations program was implemented before initiation of the project to establish support from residents, business and college neighbors, and community leaders.

Following the clean up, APS retained Riparia, an ecological restoration firm based in Prescott, to revegetate the site. Riparia enlisted a corps of volunteers from throughout the community. Revegetation included the planting of more than 1,000 native trees, shrubs and grasses.

APS managers worked with area residents, environmental groups, the West Granite Creek Master Planning Committee, and the City of Prescott Parks and Recreation Department to create a plan for developing city property at the east end of the site into a recreation area.



*Johanna Hawley, a Prescott neighborhood activist, was instrumental in gaining residential support for the APS clean up program. She addressed the dedication ceremony audience to thank neighbors who volunteered in numerous ways. Seated left to right are Ed Fox, Pinnacle West Capital Corporation Vice President-Communications, Environment and Safety; Mike Johnsen, APS Community Relations Manager; Judy Heywood, APS Environmental Consultant who supervised the project, and Prescott City Councilman Dick Cooper.*

## ENVIRONMENTAL, HEALTH STUDIES PRECEDED REMEDIATION

Over 1,500 manufactured gas plants (MGPs) operated throughout the United States from the early 1800s to about 1950. They made synthetic gas for domestic heating and lighting. By 1908, there were 13 manufactured gas plants operating in Arizona, including the one in Prescott.

When synthetic gas was manufactured in Prescott, the process used a variety of petroleum fuels and generated several byproducts. These byproducts included tars, lampblack, oils and purifier wastes. The tars were comprised primarily of polynuclear aromatic hydrocarbons (PAHs). Lampblack was primarily elemental carbon with PAH trace levels and metals such as lead. Purifier wastes can include tar and lampblack, as well as metals, sulfur and iron-cyanide. Residual crude oil was also generated.

Remediation of the Prescott site followed extensive environmental

studies, which started in 1993.

Samples were collected from 20 groundwater monitoring wells, subsurface soils, creek sediments and surface water. Initial studies indicated there were surface and subsurface soil, surface water, and groundwater impacts.

While none of the groundwater or surface water in the area is used for drinking water purposes, studies also determined that under certain conditions the groundwater recharges to Miller Creek.

In 1996, APS installed a 150-foot air sparging trench near the Miller Creek bed to treat the water through air stripping and bioremediation.

Two health risk assessments were conducted, one in 1992 and a follow-up in March 1999. The results of both assessments showed APS workers and nearby residents had no measurable increased health risk when compared to people not working or living near the site.