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GOING UNDERGROUND



*Reflections on Mining Life
in Arizona's Copper Triangle*

GOING UNDERGROUND

Reflections on Mining Life in Arizona's Copper Triangle

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Historic photos courtesy of the Superior Historical Society

*Cover photo: A.C. Villalobos worked on the first blast for the
Never Sweat Tunnel in 1969 (photo courtesy of A.C. Villalobos).*



INTRODUCTION



Wagon teams at the Silver King Mine in the 1880s get ready to begin their journey to the Pinal City Mill.

In mid-2004, Resolution Copper Mining conducted 16 interviews with former miners from Superior, Arizona, and the surrounding Copper Triangle area. The interviews were edited and compiled into a video that provides an overview of the complete oral history project. The video, along with the full catalogue of tapes, has been made available to museums, local schools, historical societies, and other learning institutions. The interviews were then transcribed and used to create written memoirs that appeared in local newspapers and, ultimately, became the basis for this book.

Resolution Copper undertook this project in order to preserve the experiences of these unique individuals forever and to pay homage to the people who built the communities of Arizona's Copper Triangle. We are proud to offer you the opportunity to get to know these amazing men and women.

PREFACE

All too often the story of mines and mining is told in numbers. Whether they indicate dollars, pounds, years, costs, price, depth, width, levels, wages or tons, they are still numbers. Rarely do they tell the story of the people and the places. While the account of an intrepid prospector who finally makes a rich strike, becoming wealthy in the process, is a story associated with many mines, the account of the people in a given place whose lives are shaped by that property frequently becomes obscured as mankind catches news of another bonanza in a new location.

Recognizing an unusual opportunity, representatives of Resolution Copper gathered stories from miners still living in “The Copper Triangle,” a relatively small geographic area that has seen its share of mining town booms and busts. Located in eastern Arizona, the Copper Triangle is bounded by the towns of Superior, Globe-Miami and Ray. Like many other mining districts, it is in remote, mountainous terrain that makes travel to it, and in it, difficult, attributes that promote a wholesome outdoor lifestyle yet inhibit some typical modern activities. As these stories suggest, such a setting seems to nurture rough, tough individuals who thrive on challenges few others would even consider, let alone try. Fiercely loyal—to their family, their community, their company and their country—the life stories of these folks provides a glimpse into the human side of a mine and the community around it.

Mining towns in the 1900s were places where children grew up “watching a parade of tough men with metal lunch boxes walk to work.” They were places of booms and busts; places where good money could be made in the mine, but it wasn’t unheard of for some residents to operate a still to bring in some extra cash. Their citizens had a strong sense of community, but even though they understood that a working mine was in everyone’s best interest, they could clash, dividing workers and management when the cause seemed important enough. They were communities in which everyone knew everyone else almost as well as they knew that a mine in full operation was their common goal.

Numbers may tell a part of the story. However, without the stories lived by the parade of men carrying their lunch boxes to work, and the families their wages supported, the numbers would not have materialized. This book and the memories it preserves are dedicated to these miners and their families.



John Rickus

President, Resolution Copper Mining

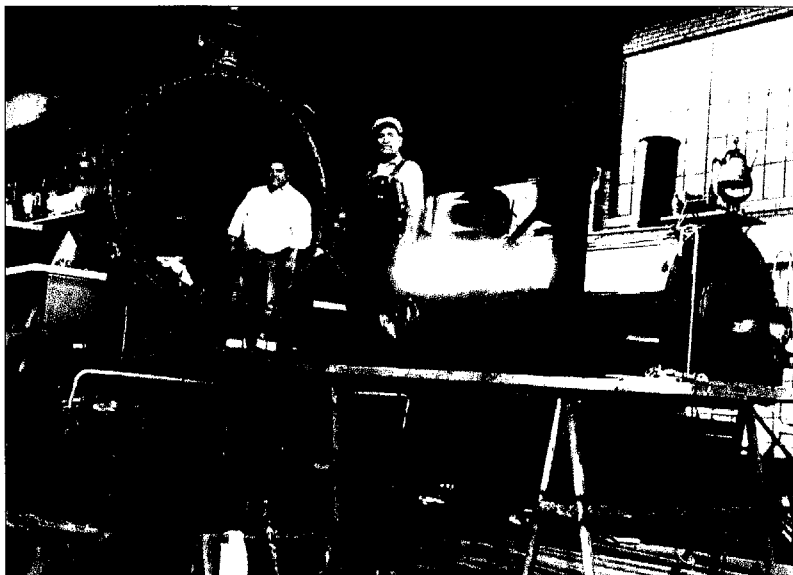
MINING IN THE COPPER TRIANGLE

The Superior, Arizona, area may have been the third point in the formation of the mining district sometimes referred to as “The Copper Triangle,” but today it appears to be the first point in a new era of mineral exploration and extraction. As the possibilities and probabilities for developing a new bonanza beneath an exhausted property, the Magma mine, are researched and implemented by a team of highly trained specialists, their counterparts—locally, nationally and worldwide—are watching, hoping that a similar occurrence exists in their location.



This postcard depicted the Magma Mill as it appeared in 1925.

Historically, the lure of highly prized minerals to satisfy man's desire for the implements, machines, vehicles and structures needed in an increasingly complex culture has been an integral part of human progress—progress consuming not hundreds but thousands of years. Only recently, as technological advances have



A narrow-gauge railroad built in 1914 to haul concentrates to Magma Junction was expanded in 1923 to standard gauge and two steam locomotives were put into service. Joe Hernandez and Gilbert Salgado are pictured here working on the No. 5 locomotive.

accelerated, is it possible to look back at previous events and understand their significance in real terms, terms in which one knowledgeable individual can relate with earlier times as well as the present day. Such a situation exists in Superior, where in just a few generations the community's economic engine has progressed from basic mining techniques to the possibility of a new and revolutionary mining enterprise.

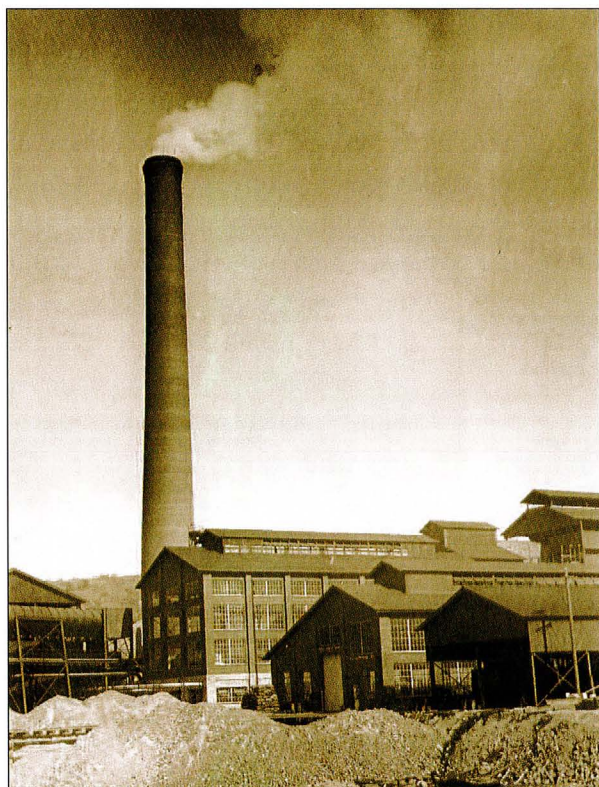
Even though mining in Arizona became safer after the completion of the Gadsden Purchase by the United States in 1854, the U.S. Civil War slowed serious exploration. In addition, early prospectors faced a double threat—a harsh environment that was rendered almost impenetrable by the Apache Indians. One way to confront the

latter problem was with the U.S. military. In the early 1870s, General Stoneman established Picket Post Camp near present-day Superior and immediately began building a road through the Pinal Mountains to Globe, where silver had been discovered. While working on the road, one of the soldiers, a man named Sullivan, found

some rocks he thought were highly unusual. He didn't share news of his find with others in his company, but instead took samples to a friend named Charles G. Mason who recognized them as metallic silver. Mason and several of his neighbors owned a silver mine in Globe. Before Sullivan and Mason could return to the site, Sullivan disappeared. Mason and his friends located Sullivan's find and on March 22, 1875, established a mining district called the Pioneer with the Silver King Mine as its center. Within two years the mine was sold to James M. Barney, a Yuma merchant, who began a mining frenzy

when he incorporated and capitalized the Silver King of Arizona Mining Company. Intense production continued until 1893 and sporadically until the 1920s, providing a total recorded production of \$6,500,000. Two other claims worth noting were located in 1875-76—the Hub, by W. Tuttle, and the Irene, by Irene Vail of Globe.

During the Silver King search, prospectors discovered and rejected the Magma mine site because there was too little silver and not enough copper. Ironically, in 1880, the Silver Queen Mining Company was organized in New York to work a site very close to the Magma mine. This company also acquired the Hub and the Irene, and in 1885 they were patented. A map of the former property, dated 1882,



The Magma Copper smelter was completed in 1925 and operated until 1971, when it was closed and partially dismantled.

indicates there was a shaft 400 feet deep with short crosscuts at 100-foot intervals. If the high hopes of investors in the Silver Queen were ever realized, no record survives, and nearly 30 years would go by before a profitable mining operation could be launched in the area.

As mines were established new communities came into being. The one closest to the Silver King, near Stoneman's Picket Post Camp and the present-day site of the Boyce Thompson Arboretum, became known as Pinal City. By mid-1879 it had 2,000 residents, a post office and a newspaper called the *Arizona Drill*. By 1891, however, the population was down to ten and the post office was closed. Three miles up the road there was an earlier settlement, identified as Hastings on a 1900 map of the Pioneer Mining District. Local lore said it was named for a San Francisco merchant who operated a mine there.

Another mine in the vicinity of the Magma was the Gold Eagle, owned by George Lobb. In 1902 he sold it to a Michigan company and the property became known as the Lake Superior and Arizona Mining Company. It was incorporated and capitalized for \$200,000 in the fall of 1902, but had to be reorganized in 1904 when it was capitalized for \$2,500,000. After selling the property, Lobb stayed in the area and laid out a town site, established a post office and, according to some accounts, installed himself as the first postmaster. He called the town Superior.

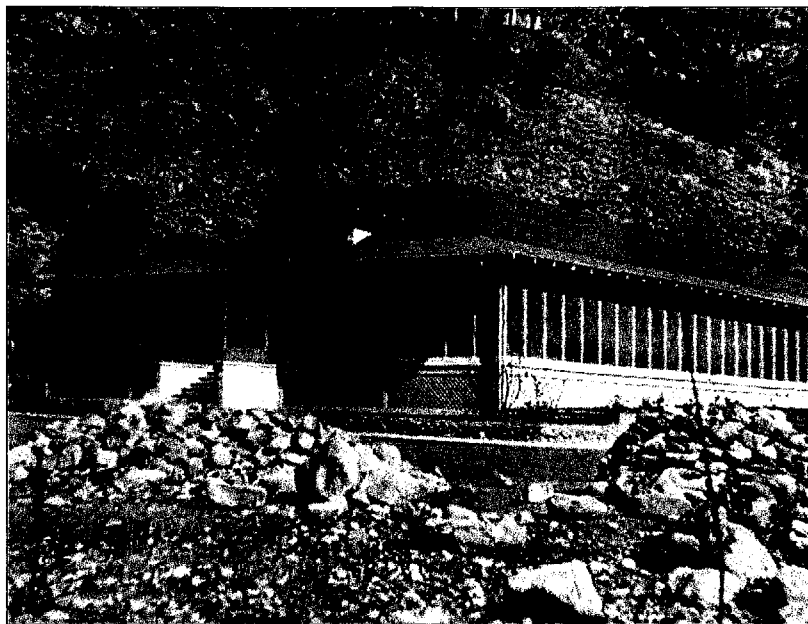
Copper prices rose dramatically as the twentieth century dawned, causing people familiar with the Silver Queen Mine to recall that it was rich in the red metal. Soon investors from nearby Globe leased the Silver Queen, naming their company the Queen Copper Mining Company. Their operation was suspended after one year when the First National Bank of Globe failed during the depression of 1907. That year, although they went no deeper than 300 feet, 212 tons of ore had been shipped to the smelter in Humboldt. It was mostly chalcocite, valued at \$27,777. Work at the Lake Superior and Arizona Mine also stopped in 1907. Within three years the scene would begin to change forever with the arrival of Fred Flindt, a field engineer for George Gunn, and William Boyce Thompson, a 41-year-old mining engineer and investor who had already made his first million through mining investments. They came to examine claims south of Queen Creek, but observed "strong faulting along the Silver Queen vein" and hired Henry Krumb to make a thorough inspection.

The Magma Copper Company was organized in 1910 under the laws of Maine and capitalized for \$1 million. Shares were \$5. The Silver Queen was leased, and work started on the Flindt adit tunnel to connect with the Silver Queen shaft on the 215 foot level. The new company eventually acquired the Lake Superior and Arizona Mine.

By 1912, the year Arizona became a state, ore from the Magma mine was hauled by wagon for \$5 per ton to Florence some 35 miles away. The wagons returned to Superior with supplies at a cost of \$7 per ton. From Florence the high-grade ore was shipped by rail to a smelter in Hayden, another 35 miles east of Florence and almost due south of Superior. These shipments included 114 tons of "first class" ore assaying 48 percent copper and 68 ounces of silver; 168 tons of "second class" ore assaying 16 percent copper and 18 ounces of silver for a total value of \$167,000. During the year the Magma shaft was deepened to 800 feet. When the Lake Superior and Arizona and the Magma mines failed to meet early expectations, it was the old Silver Queen that came through. By 1914 production justified a railroad line, and commercial power was brought to the mine from Roosevelt Dam.

In light of present-day developments, the 1916 annual report of Magma Copper Company President W.H. Aldridge seems prophetic: "The favorable showing on the 1,500-foot level, which is not yet fully developed, insures the continuation of the main ore shoot ... As to what depth is problematical, but the fact that the bornite and chalcopyrite found in the lower levels is believed to be primary ore, the chances are favorable for the main ore shoot to continue to a considerable depth." The company increased the capacity of the concentrator to 300 tons daily. The stockholder's faith was justified—by 1918 copper sold for 25 cents per pound, and Magma was able to get its copper to market for 16.425 cents. In his history of Arizona mining,

Rock to Riches, mining engineer Charles H. Dunning observed that before World War I "the Magma mine had evolved from an unsung silver prospect to one of Arizona's greatest bonanza copper mines."



The Magma Club, built in the early 1920s, was the center of activity in Superior. For \$2 a month, mine employees and their families could enjoy dances, picnics, a swimming pool, and a variety of athletic endeavors.

At the end of the war, faced with mounting stocks of metal and a declining market, the Magma mine operators began development work and improved their underground facilities. They produced enough to pay expenses while they sunk both shafts to the 2,000-foot level and drove a haulage tunnel to connect them at the 500-foot level. Their net production cost in 1919 was 14.92 cents per pound while the average selling price was 18.53 cents. Net earnings that year were \$178,077. Copper continued to be a surplus commodity, and in 1922 no ore was mined, other than what came from continuing long-range development work. The narrow gauge railroad was converted to standard, mill capacity was increased to 600 tons per day, and a smelter was planned. The work was financed by

\$3,600,000 worth of bonds. Mining resumed in 1923, and in 1924 Magma built its own smelter. By 1929 there were seven shafts, the deepest nearly 3,000 feet, but the company couldn't overcome the Depression that began that year, and in 1931 ceased production. They weren't defeated, however, and continued development to the 3,200 level. During 1932, operations were maintained on capital. The price of copper averaged 6.15 cents per pound. It had been 8.39 cents the year before.

feet. A new ore vein was discovered in 1940.

On the eve of World War II the United States government wanted all the copper it could get. The government also wanted all of the able-bodied men it could get. The stronger market for copper was seriously impacted by a lack of experienced miners, a shortage that caused the Magma mine to stop producing zinc, a metal which required more expert handling. Production costs continued to go up during the war, but government price controls didn't adjust.



Members of the 1948 Magma Copper Globe-Miami District Rescue Crew included (back row, left to right): O. Woodburn, I. Bouldin, W. Stewart, E. Mathews, H. Deffenbaugh, C. Bracamonte, A. Daves, M. Guzman, J.F. Buchanan, G.L. Augustadt, D. Gardner, C.B. Foraker, W.P. Goss, D. Orr, (front, left to right) E. Nunez, A. Monroe, W.A. Davis, P.V. Amaro, A. Durazo, H. Tomerlin, J. Garrido, E. Garcia, L. Delgado, L. Sainz, and E. Marquez.

Just as rising copper prices made the Silver Queen a viable property in 1900, zinc came to the rescue of the Magma mine in 1937. Mine officials knew that in places its ore contained considerable amounts of zinc, and a separate concentrating plant for zinc-copper ores was installed. The ore averaged 2 percent copper and 7.5 percent zinc with nominal values in gold and silver. By 1939 the price of copper was 10.6 cents per pound. The company installed a ventilation and cooling system along with hoisting equipment capable of reaching a depth of 5,000

deposits in foreign countries began production, requiring American mines, with their lower yields, to work harder, faster and smarter. That has become a rallying cry for Arizona's mines, including Magma, throughout the last half of the twentieth century. Even so the state continued as the leading copper producer in the nation. Technological advances have been offset by increased environmental controls, or by rising labor costs. The only area that mine operators could hope to influence was productivity.

Although World War II was dramatic proof that a domestic supply of natural resources, especially copper, is a must, that fact had little influence on production or the world market. With government price controls no longer in place, U.S. mining profits would depend on the market forces of supply and demand. All the while, a new competitor was growing stronger—a much higher grade of copper

Labor problems reached the boiling point in the last quarter of the century. Due to agreements in previous union contracts that prevented lowering wages, the mining companies began to cut payroll through layoffs and closing facilities. Management at the Magma mine took a different approach. They began involving their workers, through the unions, in a new strategy to share some responsibility for running the company. Writing about the Magma program, Victor Forberger, Center for Urban and Regional Policy at Northeastern University, said that the company and the unions “developed the kind of partnership that few marriages ever achieve.” The company largely accepted the presence of unions, allowing union officers to meet with prospective hires and even commending unions for making much of the improvements in productivity possible.



These miners took a minute for a photo on the 3500 level in 1974. Pictured are (back row, left to right) Joe Castro, Kim Kilpatric, Luis Beltran, Raymond Peralta, and (front) Eliss Alonzo.

Economic factors ultimately forced the closure of the Magma operation in 1996 by BHP Copper, Inc., which by this time had acquired the 100-year-old property. Exploration conducted in 2001-2003 indicated the presence of what may be one of the largest copper deposits ever discovered in North America, and in 2002 Resolution Copper took over management of the Magma site to explore the feasibility of developing a new mine to tap this deposit. When it goes into production it will be a Twenty-First Century operation, the likes of which the first miners at the Magma mine would have difficulty believing.

Like the phoenix bird that symbolizes Arizona's capital city, the Magma mine appears ready to rise from its ashes.



In 2005, Resolution Copper Mining began the rehabilitation of Shaft No. 9 in order to explore the feasibility of developing a new mine to tap what may be one of the largest copper deposits in North America.

THE ARNETTS: COUPLE RECALLS A MORE 'RURAL' SIDE OF SUPERIOR



ALEX & JEAN ARNETT

He was a copper miner with a yen for ranching. She was a waitress who sometimes daydreamed about living somewhere more, well, cosmopolitan.

She hadn't meant to stay in Superior, and certainly didn't intend to marry a miner. But when young, pretty Jean caught the eye of one Alex "Red" Arnett, it wasn't long before he was showing up regularly in the café where she worked, clean-shaven and spiffed up, with his signature mop of red hair all slicked down. Soon he was walking her home after her shift, sitting with Jean on her family's porch until her grandmother shooed him away.

November 2005 marked the 52nd wedding anniversary for Red and Jean who, between them, have seen the town go from having wild burros roaming the streets and irregular electrical service to a booming mining town and then to a town that is ready for economic revitalization.

Unlike most of the men who worked for the mines in the early 1950s, Red didn't have a strong interest in becoming a miner. Ever since he was a little boy, he'd dreamed of becoming a bona fide cowboy. Southeastern Arizona's other major industry at that time was cattle ranching.

When Red came back from his tour of duty with the U.S. Marine Corps, he tried desperately to get a job with a ranch, holding out as long as he could, selling off possessions for cash to live, until there was nothing left to do but walk into the Magma mine business office and ask for a job.

While he did get a job as a laborer, he never gave up his dream of being a cowboy, and at one point began working at a ranch in Florence Junction on his days off, helping to drive wild horses.

At one point, Red had the opportunity to participate in a full-fledged cattle drive for the Clemens Cattle Co., and since he had some vacation time saved, he asked for the time off. The mine officials gave Red the time off, albeit reluctantly, cautioning him that he would have to decide once and for all if he was going to be a miner or a cowboy.

Ultimately, fate stepped in and made that decision for him.

While attempting to round up some yearlings, Red's horse stumbled and fell, temporarily pinning him beneath. His leg broken, he had to be taken down the mountain to the nearest school bus stop so the bus could bring him into town and eventually to the hospital. With a cast up to his thigh, Red wasn't able to be much of a rancher or a miner.

Hard times fell on Red, including being let go from the mine. He spent some time as caretaker for a local ranch, whose crew was out on a roundup. But when that roundup was finished, so was his job. He tried to go back to the mine, but they still remembered his name ... and the answer was still no.

Finally one of the hiring bosses softened toward him and called Red with a job opportunity. It had less prestige than working underground, but that suited Red just fine. "I never did like to be confined," he explains.

Red says he learned his lesson. "I stayed there, I didn't try to go and play cowboy. I would still help out at my friend's father's ranch on the weekends, but it didn't get in the way of my Magma job. I didn't have any more trouble with the mine after that."

All of his jobs with the Magma mine were aboveground. He started as a laborer, pushing 12-by-12 timbers that came in off the railroad cars in to the mine's framing shed. After that, he was promoted to a helper, helping the man inside the framing shed put the timbers in the lathing machine. Then a job driving a truck to deliver ice to the smelter and the mine pits came up. The job started at 3:30 a.m., delivering the large blocks of ice to the coolers so that miners could chip off chunks and add them to their water pouches (in the days before metal canteens) prior going on shift at 7:30 a.m.

"I bid for it, but they didn't want to give it to me," Red says. "The union helped by pointing out I had seniority. The union really did help the miners."

But not even the union could do much to help when it was discovered that Red had a serious physical problem. One day while at work, Red said he "felt a little funny." The next thing he knew, he woke up in the hospital.

Though he doesn't talk about the specifics of his condition, the results of it are periodic seizures. Whether caused by an earlier accident (he fell off a horse during a town parade and hit his head), or some previously undiagnosed medical condition, the end result was the same.

EARLY RETIREMENT.

After 30 years with Magma, Red said goodbye in 1974. “They had a big party for me up at the Magma Club,” he recalls. “Everybody in the company gave me a party and money and everything.”

He did some work for the city for a time, and other odd jobs. When their youngest daughter (one of four children, two boys and two girls) got accepted to Northern Arizona University, Jean and Red moved there also to be supportive. “It was different, working up in the cool weather,” he says. “We eventually came back to Superior, and we’ve been here ever since.”

It’s hard to escape their memories of and their ties to the town. Jean remembers her mother sending her to the store to buy lunchmeat to make her father a sandwich during his lunch hour. She also recalls getting in trouble when she didn’t quite make it home in time, being distracted by the area “wildlife”—whether wild burros roaming the street, or interesting bugs crawling along the dirt, or the occasional cows that would wander into town.

Superior was a fun town for a child, Jean says. “If burros were in your yard, they were yours for the day. We’d get on them and ride around, or they’d dump you or refuse to walk. The adults would chase them out of their yards, sometimes even out of the drug store or other local shops. They’d only move off the street when they were good and ready.”

Even the cows got into the act, eating plants in people’s yards, napping in alleyways, and knocking over garbage cans looking for a snack.

As the town modernized, so did the entertainment. At least, it did for the adults.

Red’s dad, Alex Arnett Sr., ran the local pool hall, located where Lola’s Café now sits. Red has a sneaking suspicion that his dad was selling bootleg hooch as well, but he was too young to know for sure, and no one in the family ever ‘fessed up. If pool wasn’t your game of choice, an illegal card game usually could be found in the back room of one of the many local watering holes.

The couple hopes to see the vitality of the town—minus the illegal activity—return some day. Horses have given way to ATVs, and much of the town’s rural nature has disappeared. But there is still enough of the small-town atmosphere left to make it an attractive place to raise a family and put down deep roots, just like the Arnetts did, says Red and Jean.

GEORGE COX: A LIFE IN THE MINES

Other than a few years spent overseas during World War II, George R. Cox lived nearly his entire life in southeastern Arizona. One of nine children born to the Cox family in Globe, Cox spent his early teenage years traveling the state as part of the U.S. Conservation Corps, digging roads, widening trails, fighting forest fires, building fences for pastures and occasionally punching cows and breaking horses. But what he really wanted to do, and what he eventually spent most of his life doing, was to work in the copper mines in the Globe-Miami area.

After returning from the war, Cox found himself short of funds and short of a home. The sprawling ranch house built in Globe by his father had been systematically dismantled and sold by an older brother who took refuge in the home while dodging the draft. All that remained of the main house was three rooms.

Cox needed a job so he could begin rebuilding his life and his home. Although the war created a greater demand for copper, jobs at the mines and mills were scarce, as there were more men than available positions.

He began taking any odd jobs he could find.

“As time knocked along, I worked wherever I could find work,” Cox recalled. “Finally I tried to hire out at Miami Copper Co.” His first stab at Miami Copper didn’t go to well as he clashed with the company’s employment agent.

He spent some time working for the city of Globe’s streets department, sweeping trash out of the gutters. It was a paycheck, but he never stopped looking for a job at the local mines.

He and a friend tried to rustle a job at Inspiration Copper Co., but after no luck, the friend suggested they go to Miami Copper. Cox felt that after his previous encounter with the employment agent there, his chances of getting hired were slim to none. It came as quite a shock to discover that not only had the agent apparently forgotten their earlier clash, but also was willing to actually hire him. “They put me to work on the concentrator,” Cox said, where pulverized rock is mixed with water to begin the mineral separation process. After only a few months he shifted duties and went to work with a former Conservation Corps buddy on a newly formed Miami Copper rigging gang.

“You have to be an alert person on the rigging gang—everything you handle is heavy and dangerous,” Cox explained. “I liked that kind of work; I didn’t like to stay in those buildings.”

An unexpected benefit of his tenure at Miami Copper was the ability to reconstruct his home using old timbers and other cast-offs from the mine. One room in the home was reconstructed with two-by-twelves for the roof. Other rooms incorporated planks recovered from water tank roofs at the Old Dominion mine, where he also put in his time. “You’d be surprised by the things in that house,” Cox said with a laugh. A co-worker of Cox’s once said that if the mines ever came to reclaim their property from the homes in Globe and Miami, nearly all of the houses would fall to the ground.

At one time or another, Cox worked for nearly every mining company in the area, and fondly recalled his friends and co-workers and the good times they had together.

"I always had my fun. You have to, if you make a living at the mine. Regardless of the rules, there is horseplay. We used to have big water fights and big wrestling matches. We also did our work."

And work he did—as a smelter, a rigger, a pipefitter, overseeing a concentrator, and eventually, overseeing his own rigging crew as a supervisor. He spent time in nearly all the local mines, from the Old Dominion and Miami mines to the Inspiration and Continental Copper mines.

His hope was to see the glory days of mining return to eastern Arizona. He believed the advances in technology could make the business both safer and more profitable, and he knew there was ore out there just waiting to be found.

"There's mineral everywhere you look. In my mind, I figure there are still worlds of copper over in that country. I hope they mine it."

Cox retired from the mining business in May 1984 with some trepidation that he would become utterly bored after a lifetime of activity. But being George, he managed to keep his schedule full, whether it was helping out an elderly neighbor with some minor home repair, or taking a young apprentice under his wing to impart just some of his vast knowledge, or joining local organizations. Cox was a member of the VFW, American Legion, CC Camp Alumni, Gila Historical Society, Bullion Plaza Museum, and the Cornish Society.

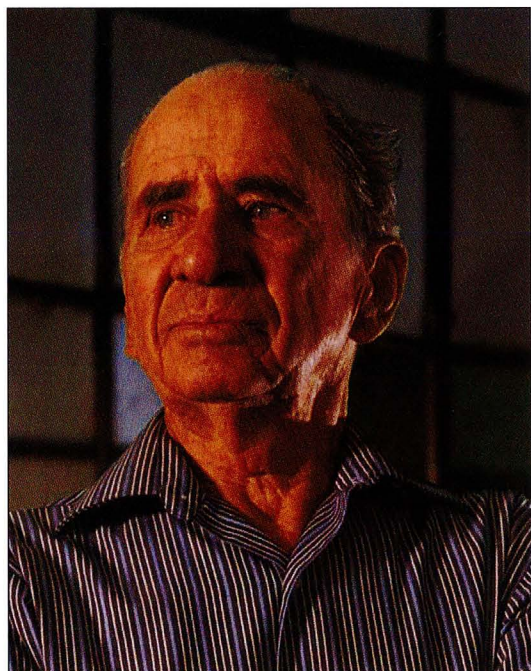
He also was an active member of the People of the West, a group whose mission is to resurrect mining and ranching in the American Southwest.

"I was never bored. In my older years, I tried to follow one golden rule, 'Do unto others as you would have done unto you,'" Cox said.

"When I die, I just hope they say 'He was our friend,' that's all."

George Cox died Feb. 4, 2005. He is survived by his wife, Hazel, and son Hopkin "Hoppy" Cox.

FOR EDWARD DENOGEAN, MINING WAS A 'NICE JOB'



EDWARD DENOGEAN

Most afternoons, you can find longtime Superior resident Edward "Eddie" Denogean working at the restaurant he and his wife of more than 50 years started a few years ago, *Casa Denogean*, alongside U.S. Highway 60. "She's 71, I'm 78, so we have no business running a restaurant," he says with a laugh. "But she likes to cook, and people keep going back there. So she's doing all right. It's her restaurant; I just help out."

Starting a restaurant at his age may be considered a risky business. But Denogean is no stranger to risk, having spent 32 years of his life hard rock mining underground in Superior for the Magma Copper Company.

In those hot and dangerous years underground, Denogean worked just about every job a miner could have, from graveling tunnels to digging stopes and drilling raises. "I got hurt a couple of times," he admits. In one incident, a boulder broke off from the shaft's ceiling and broke his hand. Another time, a loose boulder fell from a raise and hit him square on the forehead as he looked up, and though he didn't pass out, he still has the remnants of a lump on that spot today.

"Anybody who works underground for a long time, you've got to expect to get hurt a little. That's why you've got to follow the safety rules," he emphasizes. "It takes a few years to figure out how to follow procedure, how to go about it the right way. It's like any other job; you've got to learn as you go. The old timers would take

the new guys and work with them for a couple of months, show them what to do. They were very helpful."

Like most miners working in southeast Arizona in the heyday of copper mining, Denogean had a nickname. But unlike most miners, his was "inherited."

Denogean was given the nickname “Nice Job” after the miner who formerly held the moniker passed away. “I don’t know why, somehow I got stuck with it,” he says.

Also like many of the other miners working for Magma, Denogean never finished high school, and joined the Armed Services—in his case, the Navy—when he was just 17. After completing his tour of the South Seas near the tail end of the World War II, Denogean returned to Superior and went to work for Magma in 1947 at the age of 21. He made about \$7 a day.

Denogean says he wasn’t afraid of hard work and enjoyed the camaraderie that he had with other miners on his team. He recalls a time when he and fellow miner Roy Santa Cruz were working the No. 5 shaft, which at the time was about 5,050 feet deep. The two men were following a drift, trailing a vein 8 or 9 feet wide at the 4,900 level. The problem was that, at that depth, water kept seeping into the drift, and it would hit a soft deposit of lime. The lime would expand and cause the mine car rails to curve and buckle, so that the track was more like a mini roller coaster than a flat track. Denogean says the drift had to continuously be mucked out to keep the track flat. “You’d start at the front, and by the time you got to the end, the front would need to be mucked again,” he recalls with a shake of his head.

A lot of people unfamiliar with mining assume that at hundreds or thousands of feet below the surface, the ground is packed solid. Denogean says that’s not always the case.

One time he was driving a drift at the 3,600 level when his crew found a large cavern with white crystals all around it, most likely quartz. Sometimes miners would find rocks embedded in the shaft walls that were tumbled smooth by water at some point in their history. Denogean speculates that the area had substantial groundwater thousands of years ago that left behind air pockets and other deposits when it receded.

Denogean retired in 1982, when the mine shut down. Three of his four children two boys and two girls moved to other parts of the state, but the Denogean family chose to stay in the town in which they had spent most of their lives, a town they had seen change so much over the years.

Born in 1926, Denogean moved with his family to Superior when he was 5 years old. He was still a young boy when the Great Depression hit, but remembers the stories of his father, who worked at the mill and made bootlegged whiskey to supplement the family income during those economically tough years. Denogean is quick to point out that his dad wasn’t the only one making moonshine in the caves outside of town, in an area known as the Badlands.

Denogean recalls when families were using kerosene lamps and wood stoves, when men with donkey carts would come through town selling chopped mesquite for firewood, before it was eventually replaced with coal that was sold through the town mercantiles.

While he doesn’t bemoan the advances that brought electricity and plumbing to the town, there are some things that he does miss. Denogean remembers when miners would return home from work each day, and they and their families would visit with the neighbors while the children played in the yards together.

There are other things he’d like to see return to the town, most notably a hospital. He hopes that, if the mine reopens in the coming years, the population boom will justify the need of a hospital, so that Superior residents don’t have to drive into Mesa. He’d also like to see more recreational opportunities for the younger generation.

“I like living in this town, I’ve enjoyed it here,” he says. “There are things that could be better, but it’s still a good place to live.”

POLLY DRAKOVICH: A LOOK BACK FROM A WOMAN'S PERSPECTIVE



POLLY DRAKOVICH

When most Arizonans think about the town of Superior, they think about mining. But when Superior native Polly Drakovich thinks about her home town, she recalls summers swimming in the pool behind the Magma Club, “quiet time” in the afternoons when the children rested and the mothers talked quietly with each other in the front yard, and trips into Phoenix that were an occasion to dress in your Sunday finest.

Drakovich, born Hildred Essie Corn in 1924 to parents Jasper and Minnie of Superior, paints a much different picture than most see when confronting the image of this small mining town nestled at the foot of the historic Apache Leap Mountain.

The men can spin yarns about the dangers and rewards of mining, the bonds of friendship and trust that are formed 3,000 feet underground, the struggle to earn enough money to raise a family and give their children better opportunities than they had.

But few hear the tales of the girls born in town who typically became the wives of the next generation of miners. Life in Superior, from a woman's perspective, often was a much different yarn.

When Polly was 6 weeks old, the Corns moved into a home owned by Magma Copper Mining Co on what is now Copper Street. Jasper was a supervisor for the mine, a rank high enough to garner him a new home built for him and his family by the company.

“We lived in that house until I was about 12 or so, and then we moved across the street to the east into another house with an extra room, because there were six children by then,” Drakovich says. By this time she had five brothers to share space with, so the mining company built the first three-bedroom house in the neighborhood—and that extra bedroom was just for Polly.

“We had bathrooms with running water and flush toilets with a septic tank at the end of the street, whereas most houses in town didn't have that,” she recalls.

The next house the family moved to was for a much sadder reason. Drakovich's father became ill with what was commonly referred to as miner's consumption, and the family moved into a home owned by the mine that was much closer to the hospital. He was the first of the family—but unfortunately, not the last—to be killed as a direct result of his association with mining.

After his death, the family grew closer together, with everyone pitching in around the house to help.

“All the boys lived at home and made a lot of work for mom, what with the washing, ironing, and making lunches every day for them to take to the mine,” Drakovich says. “We helped where we could, cleaning the house and doing dishes. I think it was a hard life for her, looking back.”

When the children were younger, they had to make their own entertainment. There were no arcades, no roller rinks, and for many years there was no library. Drakovich, an avid reader, nearly wore out the few books that they had in the home, reading and re-reading them over the years.

She was a good student, and recalls one time when her grades earned her a reward that turned her brothers green with envy.

“When I was in the first grade, I took my report card home, and on the way a man stopped me and asked to see my report card,” she explains. “He looked it over and put a check mark on it, and then gave it back. I later received a whole case of Coca Cola for getting all As. It turns out it was some sort of promotion by the Coca Cola company that year. My brothers really looked differently at me after that,” she laughs.

After school, children went home and more or less stayed in their own neighborhood for the rest of the day. “You weren't allowed to wander around town,” Drakovich says. “Most of my friends were the children of other supervisors who lived in our neighborhood.”

Summers were spent frolicking in the Magma Club pool, but only on Mondays and Tuesdays. The swimming pool closed in 1941 after one of Drakovich's brothers fell off the diving board and broke his collarbone. Following in the tradition of the Mexican siesta, after the children ate their lunches it was “quiet time.”

“Kids weren't allowed outside for a couple of hours,” Drakovich explains. “It was too hot to be outside anyway. You'd

have a fan in your house, but no central air or swamp coolers.” Even today, she says, most of the homes don’t have central air, and rely on swamp coolers to make the house more comfortable during the scorching summer months.

Occasionally there were trips into “town”—in this case, the burgeoning metropolis of Phoenix—that became something of an event in itself.

“When you went shopping in Phoenix, even from Superior, everybody dressed up,” Drakovich says. “The ladies would wear dresses and high heels. Everybody went on the bus. There was a Lerner’s Goldwater’s, a Switzer’s, and a drug store, a place where you could eat, all within two blocks of the bus station. It was an all-day event.”

Since the Corns were one of the few Superior families with a car, many summers saw them loading it up for trips to Long Beach, Calif., or to visit relatives in Idaho. It may have given the Corn children a more cosmopolitan outlook, and perhaps an itch to one day leave their tiny home town.

Though Drakovich moved away from Superior after graduating high school in 1942 and spent many years living in other Arizona communities, fate—or perhaps her heart—eventually led her back to the town of her birth. Her husband, not unexpectedly, worked in the mining industry, in this case at the smelter.

Drakovich herself was not unfamiliar with the industry, having worked as a switchboard operator and secretary to the auditor for Magma, and as a secretary for Kennecott Copper Co. in the industrial relations department and later as administrative assistant to the Quality Control director.

All five of her brothers, at some point in their lives, worked for the Magma mine. One of her brothers was killed in a mining accident in Salt Lake City, Utah, when he was only 28 years old.

The Drakovichs had only daughters; Renee was born in 1944, and Stephanie in 1947. Both went to high school in Superior, and each went on to receive a college education—Renee at Northern Arizona University, and Stephanie at Arizona State University.

Drakovich says Superior was a good place to raise a family. “We used to be able to go off and leave our doors unlocked; we might not even have a key,” she recalls.

Drakovich, who now sells real estate in Superior, sees more eyes from the Valley area turning toward Superior as a place to retire or have a summer home. Some are even using Superior as a “bedroom” community for commuting to Tucson or even Mesa.

More families can bring renewed vigor not only to the town’s economy, but also to its sense of pride, Drakovich says. She looks to parent involvement in schools and civic involvement in the community to help solve many of the problems in town, returning it to the safe, happy and close-knit place of Hildred “Polly” Corn’s childhood.

FRANK FLOREZ: ACCIDENT LEFT MINER DETERMINED TO IMPROVE SAFETY



FRANK FLOREZ

Superior resident Frank Florez can tell you a lot about working in the copper mines. He can explain the importance of backfilling a stope, recall what it’s like to work in a smelter and discuss the ups and downs of managing a mine.

But ask him about his most memorable mining experience, and Florez turns deadly serious. On Dec. 3, 1961, a fire broke out inside the Magma Copper Mine, ultimately shutting down production for several months. While, thankfully, no one was killed, several men were injured, including Florez, who was a demolition supervisor at the time.

Florez, who was on the 3,000 level of the mine at around 9:30 a.m. checking on his motor crews, was the first to spot the nearly transparent, blue-gray haze as it floated through the Number Six shaft. “The odor alerted me that this was something different than a dust cloud; it smelled like burning insulation or burning wax,” Florez remembers.

After tracing the haze back as far as he could go, he called the mine’s general manager to report a possible fire. Florez was taken aback when the response he received showed more skepticism than alarm. “Apparently he didn’t believe me, so it was an hour and

a half or two hours before the safety department came,” Florez says.

He decided not to wait for the safety inspector and began notifying all the crews under his supervision to vacate the mine. By the time the inspector arrived, the transparent, blue-tinted haze had turned into a thick layer of smoke.

“It was around noon that they finally decided to turn the stench on,” says Florez, referring to an odor that is pumped rapidly through the ventilation systems to alert those working underground of a problem and signaling them to get out as soon as possible.

Frank remained underground with a handful of men to try to prevent the fire from consuming more oxygen and filling up the compartments with deadly carbon monoxide. Their efforts proved fruitless, so Florez and the others decided it was time for them to get out as well.

The men were riding up out of the shaft on a sinking crosshead, which is a platform with rope going up center for the men to hold on to. The crosshead hit a loose guide joint, spilling all five men into the long shaft below them. Florez suffered a fractured pelvis and spent three months in the hospital in Superior.

Florez could have been angry about the wasted two hours and the skepticism of his superiors. Instead, he was grateful that no one—including himself—was killed.

“The Magma mine was a complicated shaft system and it took a half-hour to 45 minutes to get down to your working place,” he points out. “It was a mile between the Number Six and the Number Three shaft, where you could get out. We were lucky that we didn’t kill a lot of miners.”

Nonetheless, the delay in getting control of the fire cost the mine company dearly. Production was shut down completely for about two months, with only limited production possible for nearly a year.

“They had to corral the fire by scaling off a lot of the working areas,” Florez says. “It left the Magma mine in very poor shape.”

Escaping a nearly deadly mining catastrophe by the skin of their teeth might have left most men leery about returning to the mines. But Florez not only was determined to return, he had some definite ideas about things that could, and should, be improved.

“It was one of the most harrowing incidents in my career,” he admits. “But I made a personal decision that if I ever was a manager of this mine, I would change the system of how we controlled getting out of the mine. If you couldn’t reach the mine foreman or mine supervisor, you would make the decision to call the compressor house and have them turn the stench on in order to get the people out. Even an employee, and not just a supervisor, could do that.”

True to his promise, when Florez was promoted to a position high enough, he implemented the new emergency notification procedure. Florez initiated other safety improvements as well. “In some of the working places, sometimes the dust was so high in sulfur that the blasting would ignite the dust and cause a flash fire,” charring the surface of many of the support timbers. To eliminate the flash fires, foggers were placed in the mines and activated just prior to and directly after a demolition blast. The additional moisture in the air prevented the dust from igniting.

“We also put monoxide indicators up at the compressor house where there was always an employee,” Florez adds. “After each blast, the monoxide would peak, and then drop down. If it didn’t drop down, the compressor operator would notify my department and we’d try to trace out where the monoxide was coming from. We had a program of safety there that would give us ample warning because most of these fires would be slow starting.”

Florez eventually reached the rank of mine superintendent at Magma, retiring from the mine in 1992. He recalls the heyday of the mine, when it employed 1,400 men from Superior as well as Mesa and Tempe. Florez was born in Hayden, Ariz., but has spent the last 50 years of his life in Superior and has many fond memories of taking the family to dinner at the Triple X restaurant on paydays, of having to drive to Mesa to find a department store, and of tossing back a few rounds with his friends at one of Superior’s bustling local bars. “There were more than a half-dozen bars, and they were all making a good living,” he says with a laugh.

Florez also remembers with sadness when the mine was closed down from 1982 to 1986 when the price of copper hit rock bottom.

“It came all of a sudden; we gave them only two weeks notice,” Florez says. “It was a very serious economic blow to the town, as well as the surrounding towns. In 1982, the recession was quite severe, and you just couldn’t get a decent job to support your family anyplace. There were a lot of miners who had to leave town, and there was a lot of family hardship.”

Frank stayed on for a time as caretaker of the mine, and tried to stay busy—if not physically, then mentally. “Even after we closed the mine, I never lost interest in improving operations. I thought on it every day. I wasn’t just sitting there with my feet up on the desk reading the paper,” he says.

While many men from that era might have raised their children on war stories, Florez, who was in the Navy from 1946 to 1948 but enlisted after World War II was over and never left American soil, raised his six children on stories about working in the mines.

The end result of those colorful tales was that four of his six children—sons Frank Jr., Gene and David, and daughter Gail—worked at the Magma mine when it was reopened from 1986 until 1992. Only one, David, returned to the mine when it reopened briefly, but then left the industry for good after Magma closed once again in 1996. Frank Jr. also spent some time in the San Manuel mine, located northeast of Tucson. His other two children—daughters Jackie and Diane—never fell under the spell of blasting into the earth looking for that buried copper treasure.

If he could pass along one piece of advice to a company involved in a new a mining venture, it would be to listen to those who have “been there and done that.”

“It’s the men at the firing lines, day in and day out, who can have ideas about how to improve things,” he points out. “Sometimes outsiders come in and they think they’re smarter, they won’t listen to experience. But there are a lot of things that an old-timer like me can still do to help, because some of the things I thought out and engineered and laid out still apply today.”

Florez hopes that, in the end, he will be remembered as a firm but fair mine manager, someone who cared about the safety as well as the professional development of his men, and someone who continually worked to make a good mine even better.

DAVID LIRA: MINING SUSTAINED ARIZONA’S COMMUNITIES AND FAMILIES



DAVID LIRA

David Lira doesn’t hesitate when he talks about the good that copper mining did for his family and for the community of Superior. In fact, he spent several years keeping the lines of communication open between mine company owners and the residents of Superior to help build a stronger relationship between the two.

Lira was born in his parents’ home in 1938. Unlike many young men born in Superior, Lira didn’t come from a mining family. His father was a butcher by trade and also did odd jobs around town to earn extra income, such as carpentry work and sign painting. His grandfather, who moved to Superior in 1910, was the owner of a small grocery store in town. His store opened at the end of Hill Street in 1920 and closed upon his death in 1956.

“During the war there were little grocery stores all over the place,” Lira recalls. “Bubble gum would come in once a month, and each store would probably only get 100 pieces. So if you wanted bubble gum, you stood in line, and you were lucky if you got one piece for a penny.”

Even during the Depression, the community survived in part because of the continued success of the vital copper mining industry. So it is little wonder that young men raised in these south-eastern Arizona mining communities sought work at the places that seemed almost magically invincible in their childhood years.

Lira worked for the smelter in the summer of 1956 after having graduated from high school. That summer, the mine had a partial

shutdown in order to do major cleanup work in areas such as the smoke stack and furnace. The first job Lira ever had was cleaning out the mine’s flue tunnel. “It was hot and miserable and very dusty,” he recalls.

That fall, Lira went to Tucson to attend the University of Arizona but came home the next summer to earn more money by working at the Magma Copper Mine. He had every intention of going back to school; however, he married a young woman from Superior who was a student at Arizona State University. “I figured I had to work one more year until she could graduate, and she did. But by then the pay [at the mine] was pretty good, and everything was going well ... and it was 47 years before I retired,” he explains with a laugh.

Though Lira always speaks positively about mining and his own experiences, he acknowledges there were some tough times, not just for himself but for all the miners and the community of Superior as well.

When the first mine strike occurred in August 1959, Lira had a wife and a small daughter to support but he was still just a laborer and faced the prospect of no income for weeks, even months. “Later on I found work around the area; my wife was in her last year of school, so she couldn’t really work.”

Lira’s wife drove the couple’s 1956 Ford back and forth from Superior to ASU, and the truck would take exactly \$1 of gas for the roundtrip. “There were times when we were out looking for empty bottles we could sell, offering to do odd jobs like yard cleanup, whatever work was available,” Lira recalls. “It was hard for a while, but things turned out all right when I went back to work at the mine four months later.”

Like many miners who want to advance in certain areas of mine operations, Lira eventually attended “mill school” to learn to become a welder-mechanic. Prior to that, he had done various jobs for the mining company, from being a member of the labor crew at the smelter to working as an operator at the mill.

After being trained as a welder-mechanic, Lira worked in that capacity for many years, becoming a supervisor in that area in the mid-1970s. He supervised maintenance crews and later operational crews.

All the while, Lira continued his “side job,” one he had held since high school. Lira played saxophone in a dance band, and brought in extra dollars playing for dances in town and in other nearby communities. At one point, “The Starlighters” even recorded a 45-speed record. Sadly, the band—composed mostly of miners—broke up just before they were set to record their first LP record.

His love of music never died, however, and Lira proudly points out that all three of his children all girls are musically inclined and play various musical instruments.

Even as the heyday of dance bands was dying out, so too was demand for copper.

After the 1982 mine shutdown, Lira worked just about everywhere imaginable including house maintenance for the company, working as a liaison with the railroad company, and overseeing water treatment efforts, “because the company was still responsible for environmental issues and that kind of stuff,” he points out.

He was particularly tapped for the environmental duties because, just prior to the mine closing, he had been transferred from mill operations and maintenance to the environmental department. Both prior to the shutdown and afterward, Lira was asked to take on public affairs between the company and the community.

Those communications duties continued even after the mine was purchased by Broken Hill Properties BHP of Australia in early 1996.

“BHP Copper Co. felt they needed someone who knew the people in the community,” Lira explains. He accepted that job, and took it to heart. Lira felt it was important that the community understood what the company was all about, but also that the company understood the thoughts and concerns of the people in the community.

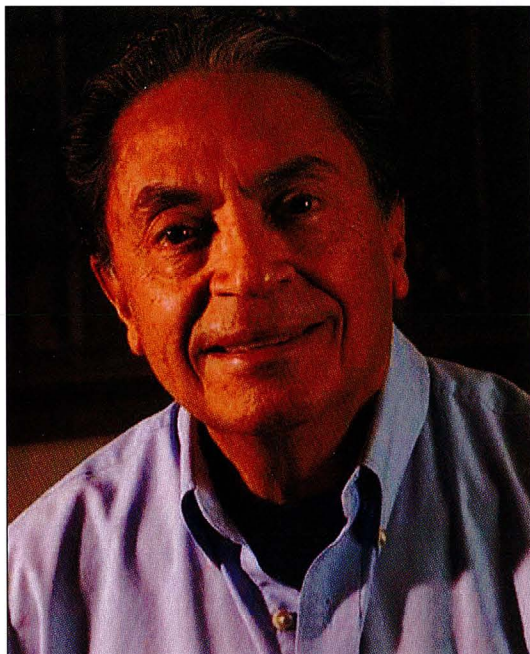
“People obviously are concerned about issues of soil and water contamination,” Lira says. “Mines are very careful now, and have new technology. I think most people are unaware of the good work the mines do in cleaning up after they leave, but they really do a good job.

“I wanted to make sure that people understood where each side was coming from,” he adds.

Lira still continues to consult for BHP from time to time, as well as for the new manager, Resolution Copper. “I’ve slowed down a little bit,” Lira admits, adding, “I like what I do and I like to stay pretty active. I figure as long as I still feel healthy, I might as well keep going, stay busy.

“I spent 47 years on this property; it put food on my table and put my kids through school, helped put my wife through school,” Lira says. “I’ve seen a lot of good people come and go, good friends and good managers, and overall I had a good experience.”

ROBERT REVELES: A PRODIGAL SON OF PROUD TOWN OF MIAMI



ROBERT REVELES

Robert “Bob” Reveles acknowledges that many of the young men from Miami High School who graduated alongside him in the early 1950s didn’t achieve the kind of business and personal success that he did.

But Reveles also is quick to point out that it is those same young men—the ones who stayed to work in the mines, who came home after the war to open a small business, who kept the town going even in its darkest times—who are the ones to be commended. They saved the town from dying away, so that people like Reveles could one day have a town to come home to.

Still, Reveles’ resume is an impressive one, and a testament to the moral and educational support he received growing up in Miami. In particular Reveles recalls the town librarian, a gentle and kind person who always told him to “dare to dream big dreams.” “How many kids get challenged like that ... and actually have an opportunity to dare to dream big and do it,” Reveles says.

Reveles points out that there is a long list of people from the Globe/Miami/Superior area who have dared to dream big dreams and gone on to see them come true. He is honored to count himself among them, and attributes his successes in life, in part, to growing up in a small town.

“These rural communities have a lot to offer,” he asserts. “The people in the urban centers of our country need to recognize that there are some unique values in these small, rural mining communities, values that permeate into every dream that every child has.”

Reveles’ own dreams and ambitions led him across two oceans, into a long career in politics, and ultimately into the field that permeated his own childhood—mining.

After graduating from Miami High, Reveles joined the Air Force at the time of the Korean War. He was assigned to the legal office at Amarillo Air Force Base. While stationed there, the personnel office contacted him about a post at NATO Headquarters in Florence, Italy. He was not immune to the lure of the romance and beauty of the Italian countryside, and accepted the assignment.

But first, he came home to Miami on leave to prepare to go overseas. He visited with Dr. Nelson Brayton and his wife, knowing they were world travelers. The Braytons gave him books about Italy and Florence, and offered tips about places to visit.

Reveles spent three years in Italy at NATO headquarters, and saw the opportunities of working with people of different backgrounds. He developed an interest in becoming a member of the Diplomatic Corps, serving his country abroad in a diplomatic career.

After his enlistment service was up, Reveles enrolled in Georgetown University’s School of Foreign Service in Washington, D.C. But with the cost outstripping his meager GI benefits, he came back to Miami and worked at Inspiration Consolidated Copper Co. in order to earn enough money to pay for his tuition. Reveles, who was one of only a handful of young men from Miami High who took the time to learn shorthand, put his skills to work in the mechanical engineer’s office, doing secretarial work.

Once he had saved up enough money for tuition, he again called on his friend Dr. Brayton, who had served as a local legislator. Reveles asked if Brayton would write a letter of introduction to Brayton’s former political colleague, Sen. Carl Hayden of Arizona, introducing Reveles and asking the senator to help Reveles find a job in the nation’s capitol.

That letter turned into a job with Rep. Stewart Udall in Washington, D.C. Reveles was brought on board to replace Udall’s personal secretary, who was about to go on maternity leave. Once again, Reveles’ shorthand skills served him well. That position ultimately led to a 25-year career working as an aide in Congress for various congressmen, including Rep. Morris K. “Mo” Udall from Arizona, 2nd District, who at one point served as chairman of the U.S. Interior Committee.

“After that, I decided that the challenges weren’t really that exciting anymore. So I tried my hand at running for Congress,” Reveles explains. He ran in the Democratic primary in 1972, and while he didn’t win, he greatly enjoyed the experience.

“I got to a point where I was interested in working in the private sector,” Reveles says. “I met with Harry Conger, president/CEO of Homestake Mining Co., which had just made a world-class gold discovery in Northern California.”

He joined Homestake as manager of Government Affairs and within a few months was promoted to vice president of

Government Affairs. "I brought to them a perspective from the environmental side that they had not really had the benefit of previously." His knowledge of environmental concerns was based on his time working with Stuart and Mo Udall, both of whom had strong national reputations in environmentalism.

"At the same time I could see, at the local level, what an overzealous application of environmentalism could do to people's lives. I wanted to bring the different viewpoints together," Reveles explains. "I found myself becoming more interested in being a consensus builder, whereas in the past I had been more of an activist. But I felt that a person needs to go beyond activism; if you are going to talk about problems, you need to talk about how to resolve problems. I wanted to bring those skills together on behalf of an industry that had given me an opportunity when I was a young man."

His determination to work with, and not against, the community and environmental activists concerned about this potential new mine ultimately led to a change of attitude in the mining community, Reveles says. That world-class deposit of ore was located at the juncture of three Northern California counties: Yolo, primarily farming/agriculture; Lake, sporting a high tourism/recreation interest; and Napa, with its famous wine country.

"We became very proactive in identifying every possible interested constituency," Reveles says. "We felt that if we could identify people's concerns, we could deal with them beforehand. A proactive approach, in the long run, would be a better use of your economic resources."

That proactive, partnering approach is part of the standard in the mining community today. "That's why I'm excited about Resolution Copper," Reveles explains. "We've learned through history, and through mistakes, that there are better ways. Mining is no different. Things that are no longer acceptable to the community aren't acceptable to the mining industry as well."

Reveles acknowledges the bad side of mining, the side that once put the bottom line before safety, put whites above ethnic minorities, and put profit before all. But the industry itself, as well as the attitudes toward miners, has changed since he was a boy. And, he says, the good that mining can bring remains a perpetual truth.

"The things that mining does are the things that everybody needs," Reveles says. "I remember listening to an old miner at his retirement party, who was asked to give some parting words. He said, 'People need things, things are made of stuff, and stuff is what we mine.'"

"Too often people in urban communities don't recognize that virtually everything they use or touch throughout the day, in their office or home, starts with mining," he points out. "Socially speaking, it also is important to not lose sight of the heritage and history of mining in communities like Miami."

That is why Reveles serves as statutory agent for the Bullion Plaza Cultural Center & Museum in Miami. He is proud to be a part of that diverse, rich history of the town, and feels it's important to keep sight of the past in order to steer toward a better future in this community that nurtured him, supported him, and challenged him to "dream big dreams."

ART 'COOL AIDE' VILLALOBOS: HOT WORK, HOT TEMPER



ART VILLALOBOS

Art Villalobos has a few regrets. He wishes he had listened to his teachers in school, who kept pushing him to apply himself, to study and try harder. He went through Roosevelt Elementary and Hardy Middle schools and like most of his peers wound up at Superior Junior/Senior High School. But he was a typical teenager, thinking he knew better than them what was best for him.

"I was kind of a smart aleck, and I didn't excel in school. But they were nice to me and they let me graduate," he says.

He did have an opportunity to go to Northern Arizona University on a football scholarship, but his family was poor and they couldn't afford to send him away.

Villalobos sees how successful his own children have become, and realizes how different his life could have been if he had worked harder in school and had gone to college.

Still, he's proud of the career he made as a miner in Superior beginning in the early 1950s. He achieved his own level of success, working his way up through the ranks and ultimately becoming a

development boss ... something he never dreamed he could achieve when he was a child, watching the miners walking through town on their way to work every morning, metal lunch boxes in hand. The sight of that impressive parade of tough men with a special kind of bond left its mark, so when he graduated from high school his only thought was to get a job with the mines.

After graduation, he was still too young to go underground, so he worked for a year at the smelter. The nickname given to him when he was 9 years old resurfaced in high school, and it wasn't long before the miners knew him simply as "Cool Aide."

"Any time anyone called me by my real name, I knew I was in trouble," he says with a laugh.

When he was old enough, Villalobos put in for a transfer to the Magma mine, and achieved his goal of going underground in 1951.

He started out at the bottom—literally. At 3,500 feet, Cool Aide's job was one of the hottest, shoveling out the hot, steaming muck from recently blasted stopes and drifts.

"It was hot, dirty work, but you get used to working like that," he explains. "In some places it might be over 100 degrees, but the more water you put on [the muck], the cooler it got."

The quicker the muck was removed, the faster the next blast could be set up, and that's where the bonus money came into play. It was about making progress, working your way through the useless dirt to get the ore body or vein.

Mining veterans like Villalobos joke about how the job was five hours of hard mining and three hours of "shooting the breeze." While the downtime might be an exaggeration, there was never any shortage of socializing, whether it was over a cup of coffee prior to clocking in, or over another cup of coffee after the miners reached their working stations. Smoke breaks and lunch breaks rounded out the daily routine ... and then there was the usual gathering at one of Superior's many bars after the workday was done.

When Villalobos had the opportunity to become a lower-level boss, he didn't hesitate. He explains that he wanted to better himself and improve things financially for his family. Villalobos started off as a level boss, moved up to assistant shift manager, then shift manager, and eventually ended up as a development boss.

"I never thought I was going to be a supervisor, but I wanted to advance and keep on going," he says. "I went up as far as I wanted to go; I had a lot of responsibility."

He took that responsibility seriously, so much so that, ironically, the man called Cool Aide ended up with a reputation for being something of a shouter.

"I used to yell quite a bit, but I yelled because I wanted to get through to my miners," he explains. If men under his supervision were working unsafely, they would hear about it from Cool Aide. That determination to keep his men safe came from his own personal experience.

"I got hurt a couple of times because I was inexperienced and I didn't know any better," he admits. "I ended up in church a couple of times thanking the Lord because I had some close calls. There was a time when some of these old timers wouldn't teach you anything. If you were going to be a miner, you had better go in there knowing what you were supposed to do."

Not all miners were stingy with their knowledge, and he picked up a lot of helpful pointers along the way. Villalobos worked 40 years with Magma and he never stopped learning about mining.

One of the bittersweet lessons he learned was how to shut down a mine operation. The Magma mine was closed in 1982 and Villalobos, as upper management, was kept on to help with the disassembly and removal of the water pumps and other expensive equipment. He stayed at the mine from 1982 to 1987.

"When the mine closed down, it came all of a sudden," he points out. "People started to leave town to look for jobs, and stores started closing. But the town never really collapsed; it's still here. I would like to see the community grow again. It's a good little town to live in."

When the powers that be decided to reopen the mine in 1989, they called Villalobos, now 56, to come back to the mine.

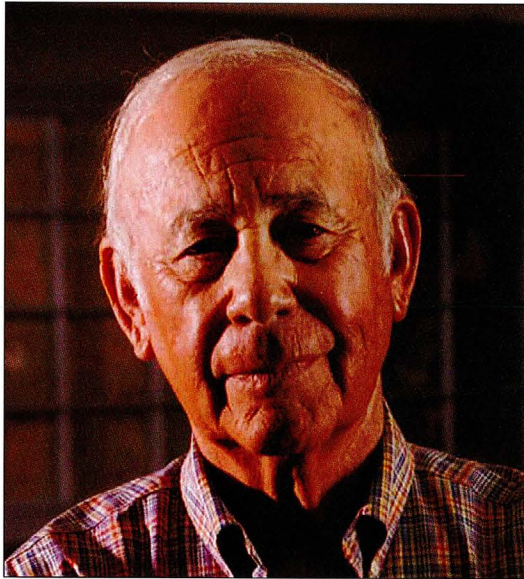
"I started working for Magma again from 1989 to 1994, when I retired." For those five years, Villalobos oversaw the repairs of the old shafts.

"I wanted to stay until age 65, but I started feeling the years," he recalls. "My wife had heart trouble, and she was get worried about staying by herself. The kids already were grown and gone." He pauses, then quietly adds, "I don't think I'd ever want to go underground again. I've just had enough of it. I used to like it, but my time with mining is over."

Still, he's proud of the life he built for himself and his family, thanks to copper mining. He's proud of the children he's raised—two sons and a daughter—in the town that he loves and has lived in since he was 5 years old.

"For being lazy in high school, I ended up with a good, long career," says the man called Cool Aide.

MANNY RUIZ: HOPES 'LIFE' RETURNS TO HOMETOWN OF SUPERIOR



MANNY RUIZ

Manny Ruiz remembers when the town of Superior was full of life: When prizefights at the old Magma Club drew crowds of hundreds and dances at the Two Republics often resulted in their own "amateur" brawls, and when miners would imbibe with friends in one of the town's 20-plus barrooms or spend a more sedate evening with their families at the entertainment capital of the town—the movie theater.

Ruiz was born in Superior, taught high school and coached football in Superior, and raised a family of five four daughters and one son in Superior. He hopes that some day soon the town he loves so well will once again crackle with the energy and vitality of a thriving community.

And that vitality may return because of something that gave the town life when he was a young lad in the 1950s: copper mining.

"As long as I can remember, Superior was a place that anyone who knew how to work hard could get a job, because Magma Copper was always in need of a good, hard-working miner," recalls Ruiz, whose father, Manuel, worked for Magma for 42 years. "So they came here, and some stayed only for a little bit because it was hot, hard work, and some stayed forever."

Ruiz also put in his time in the mines, although it wasn't to be his passion or his career. "I knew when I was in sixth grade I wanted to be a coach," he admits, adding that, "I never realized I had to

have a college education to do it. That's why I went to college. I didn't really want to be a teacher as much as I wanted to be a coach, but I couldn't be a coach unless I became a teacher, so I went into education for that one reason."

Ruiz, who was a promising athlete himself, earned a football scholarship to Northern Arizona University. After he graduated, he spent time teaching in San Manuel, until he returned home for good in 1966.

While he was a student at Superior Junior/Senior High School, he spent summers working at the Magma mine. That summer job continued, even during college and into his teaching career. In all, Ruiz spent 17 summers working for the Magma mine.

He worked on the surface for a year, and he didn't like it. "Being an underground worker was like being first string—it carried its own prestige," he explains. He pushed to be sent underground, even though he was a novice miner. But luck was with him as a spot on his team's underground crew opened up within the first month of his employment.

"It was a special privilege to be among those miners," Ruiz says. "Some of the best people I've known in my life were miners."

In the end, what brought him back to Superior was not mining but the thing he had wished for since he was a young boy: the chance to coach at his old high school. "When I came here in 1966, I was lucky to get a job," Ruiz says. "I became head coach of basketball the second year I was here. I coached football and basketball for 10 years." In all, his teaching career spanned 33 years.

Ruiz, much to his surprise, also found himself becoming active in local civic matters. "When I was in high school, I had one thing on my mind, and that was playing ball," he says. "I was never much involved in school government. I was president of the freshman class, but never did I have any real interest in that.

"When I came back from San Manuel, I came back with a different mindset," he explains. "I wanted to better my community because I had lived here most of my life." So when people started talking about incorporation, Ruiz joined the committee exploring the idea.

"We had an election in 1976 and became incorporated, and I was chosen as one of the first councilmen," he says. And that wasn't the end of his involvement in local politics. In 2001, Superior celebrated the 25th anniversary of its incorporation. Since first incorporating, Ruiz has served as mayor three times and has been a City Council member several times, ending his most recent council appointment in June 2005.

He has seen the town go from a bustling community boasting 23 bars, two drug stores and numerous grocery marts, to a place where people do most of their major shopping out of town.

"We don't have a dry good store on every corner like we used to," he says. "Life has changed considerably. The times changed and people changed. The memories I have now of the old days make me realize I was privileged to have lived here during that particular time."

He says Superior has become more of a semi-retirement community, "where people wanting to get out of the Valley will come to be in the mountains with clean air to breath." The median age of a Superior resident, according to the 2000 Census, is 39 years; 43 percent of the town's residents are over the age of 45.

"It's a different lifestyle here than it is the Valley," Ruiz says. "People are after that; they want to get out of the fast

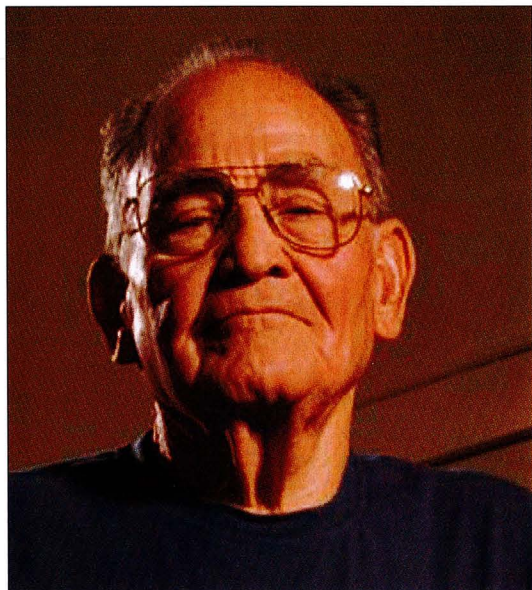
lane. This is a good, slow-paced, wholesome way of living. I treasure it."

"Once you live in a small town like this it gets in your blood," he emphasizes. "These are your roots. Everybody loves coming back to Superior. There isn't one person who doesn't remember the good old days."

He's hoping there will be just as many good times ahead for the sleepy town that he believes will be reawakened with new housing developments, a widened U.S. 60 freeway and perhaps new mining opportunities.

"When this town gets back to what it could be, those people will have good memories too," Ruiz says. "I know what it could be."

JOSE SANTA ANA: MADE A CAREER OF FIGHTING DISCRIMINATION



JOSE SANTA ANA

It is frequently acknowledged, but rarely spoken of in detail. Two men, working the same job for the same company, but bringing home a far different paycheck. The only difference between them is the color of their skin.

These days, such forms of racial discrimination are prohibited by federal law. But in the heyday of mining in southeastern Arizona, it was the status quo. A Mexican miner wouldn't make the same wage as the "gringo" working next to him. He would be passed over for bonus work. He would never be promoted to a supervisor's job ahead of a "white" man.

In those days, most of the Hispanic workers chose not to make waves about the unfair treatment because they had families to support and needed the work. And they knew there were others waiting in the wings, wanting to work in the mines, who could take their places in the blink of an eye.

But for Jose Maria "Joe" Santa Ana and his son, Otto, fair was fair, and they weren't about to be treated in a way that was less than they deserved.

Otto, who was born in Miami and first went to work in the mines when he was 15, recalls a story told by his father about an encounter with a white mine boss at the Miami Copper Mine. Joe and another Hispanic man were working their job underground when they were

approached by a white foreman who told them that they had to pay him 50 cents a day if they wanted to keep working there.

"My dad was the type of person who didn't take that from anyone," Otto explains. "He turned to walk away, and the foreman grabbed his arm." Joe told the foreman not to touch him, and the foreman taunted him with the standard, "What are you going to do about it?"

"So my dad beat the daylight out of him," Otto recalls with a laugh. "They fired my dad, which was a great thing for us. At that time the average miner at the age of 46 had silicosis, and you didn't live very long after that. Being that my dad knew about mining; he bought some claims, some of which we still have."

Joe also started his own business, chopping and selling wood to the county, which would then distribute it to residents who had no other way of heating their homes or cooking because no natural gas lines had been installed at that time.

When Otto went to work in the mines, his father's story of discrimination was never far from his thoughts. But a job was a job.

The Castle Dome open-pit mine, on the south slope of Porphyry Mountain five miles west of Miami, was opened by the Castle Dome Copper Company, Inc. It was developed as a war project, and beginning in June 1943 produced about 4 million pounds of copper per month.

When the Castle Dome mine opened, Otto was a sophomore in high school. He and some friends decided to see if they could get a summer job at the new mine. At the time, Katie Weimer was the business agent for the mine. Weimer would later become Miami's first woman mayor in 1976.

Weimer hired the group of young men, who were paid 90 cents an hour. Otto and two of his friends chose to work through the summer and the next school year, not returning to high school until August the following year, which put them a year behind their former peers. Despite the fact he would graduate a year later, Otto says the mine job was a good experience.

Three months after his 18th birthday, Otto enlisted in the Air Force. Most of his friends were joining one or another branch of the Armed Forces, and he didn't want to be left out. He signed on for an 18-month period. He had done some carpentry work while at

Castle Dome, so the military made him a carpentry apprentice. He spent a year and a half in Japan, mostly serving as a duty sergeant.

When he returned to the United States, Otto attended an auto mechanics school in Globe for two years under the G.I. Bill. After he finished his training, jobs in the area were scarce, so he sought work in California. However, after only a few months of work at a car manufacturing plant, he was laid off and returned home to Miami.

His oldest brother was a machinist for a railroad company in Tucson and got him an apprenticeship there, where he worked for a year and a half. But his pay was little and his rent and other expenses were outpacing his wages. He petitioned the local union he had joined to let him transfer his apprenticeship as a machinist up to Miami for fleet work with the Sleeping Beauty Mine, another venture by the Castle Dome Copper Co. Otto moved back to Miami and waited for word of his transfer. Eventually the Union told him the transfer was approved, but when he contacted the general manager of the Miami mine, he was told that, "The machinists don't want Mexicans working in the machine shop."

"I was boiling mad," Otto recalls. "He [the general manager] said he had no intention of changing the situation. So I joined the local Teamsters. I worked hard and eventually I made a lot of changes."

One of the first changes he pushed for was allowing Hispanics to receive apprenticeships in all areas of mine work. "If you were Mexican, it was nearly impossible to get an apprenticeship, and when they did put you on the list, they would bypass you," he explains. "We worked hard to get a new contract with the mine that stipulated that apprenticeships would be open to all, not just whites, and that they would be awarded in the order they were assigned out, with no 'bypassing.'" That new policy met with a lot of resistance from the machinists and other mine bosses, but a contract was a contract.

"That was just the beginning of opening things for us," Otto says. "As I got to be a steward and a chief steward and a negotiator within the union, I had to put a stop to a lot of the unfair things that happened."

Otto helped to develop some safety innovations for the motor pool and started a program to teach people how to drive the trucks properly. He also negotiated to get air conditioning in the trucks, where the floorboards sometimes heated up enough to melt the soles of the driver's shoes.

Of the 100 men working as machinists for the mine, 98 of them were Teamsters members. Very few of them were white, since most of those men were foreman, not workers.

"Anything that involved moving equipment, we had a good stronghold," Otto says. "But it was really a fight to get them [mine bosses] to change the things that were so common. They didn't like Hispanics who talked back and stood up for their rights. That was one of my traits; I'd stand up to anyone."

Otto still is a staunch supporter of equality in mine employment, whether related to race or gender. "I wanted to make sure everybody got a fair deal," he said. "I was proud to be a person who got involved. I was the only one of my family that didn't go to college, but I still really made a difference."

ROY SANTA CRUZ: FAMILY TRACES ITS OWN TRACKS OF MINING HISTORY

Eighty-year-old Roy Santa Cruz says his family has left its mark on the southeastern Arizona mining communities for at least four generations—and he means literally.

The oldest bit of evidence is still visible, barely: faint tracks worn into the ground by the steel wheels of carts that used to take ore out of the Silver King mine in what was once known as Pinal City, now the site of the Boyce-Thompson Arboretum.

Roy's great-great grandfather, Jose Maria Santa Cruz, was a blacksmith from Spain who moved his business in the late 1800s from Winkelman, Ariz., to what was to become the Superior area. It was he who crafted and repaired those steel wheels for the mining carts for the Silver King, the richest silver mine in Arizona history. Jose's old forge and anvil can be seen today at the Arizona Mining and Mineral Museum in downtown Phoenix.

The Silver King Mine eventually played out in 1888, but the Silver Queen, which opened in 1881 as a silver mine and gradually became a successful producer of copper, was booming. A settlement formed around the Silver Queen, and by 1900 the town site of Superior was laid out by George Lobb.

In 1910 the Magma Copper Company took over the Silver Queen properties and began to develop them into large-scale producers. A huge smelter was constructed in 1914 and continued successful operation until 1981, when copper mining began to diminish in the Superior area. Copper mining finally ceased altogether in Superior in 1995.

It was Jose who raised his three orphaned grandsons—Roy's father, Rogelio, and uncles Louis and Conrad—in a place where mining was practically the only job in town.

Rogelio Jr., dubbed “Roy” when he was 6 years old by a teacher who couldn’t pronounce his name, was born in Globe, where his dad worked in the Old Dominion Mine. The family moved to Superior in 1936, where his father worked as a shaft miner. Roy also worked in the mines and in the smelter, in Superior, as did his younger brother, Charlie.

“We go a long ways around the mining community,” Roy says. He worked for the Magma smelter when he was “just a punk,” picking up extra work here and there, beginning at age 14. Even at that tender age Roy was over 6 feet tall and weighed close to 200 pounds, so the hiring bosses didn’t inquire too closely into his age.

Roy was working in the Magma mine when he was drafted for the Korea conflict. He was a junior at Superior High and already had two colleges—UCLA and the University of Arizona—offering him football scholarships. His father was out of work, and Roy didn’t want to leave his younger brother, Charlie, a freshman at Superior High, with all the responsibility on his shoulders. But Charlie said he’d quit school and go to work in the mines to support the family; Charlie was just a big as Roy and looked years older than his actual age, so getting a job at the mines wouldn’t be a problem for him. Charlie would eventually spend 33 years working for the mines.

Roy didn’t want to become a draft dodger, so in March of 1943 he left—albeit reluctantly—to serve with the U.S. Navy Amphibious Forces in the South Pacific and later as a combat trainer in Fort Collins, Colo., before being honorably discharged in 1946. He remained in the Naval Reserve.

Roy returned to Superior and the Magma Copper Mine in 1947. Through the course of his mining career, Roy did just about every job you could think of. He was a “straw boss,” weighing the copper, putting it in the box carts and rolling it into the smelter. He worked in development, in the shafts and in the tunnels. “I think I was one of the best miners that they had,” Roy says, none too modestly. “I could blast three rounds in a drift in one shift. We used to make quite a bit of money in the bonus work.”

Much of that money was spent in some of Superior’s 20-plus bars, drinking and dancing. “Superior was a booming community. We drank more whiskey and beer per capita than anyone else, and we’re proud of it,” Roy says. “The miners worked hard, so it was usual to get a drink every time you got off shift. We knew it was a dangerous place to work; that’s why when we got off shift we’d have a few drinks, to take our worries away and do a little dancing.”

Roy also was a ballroom dancer, making all-state as a sophomore at Superior High, and was quite a favorite on the dance floor with the ladies.

Roy was offered a supervisor’s job at one point, but told his boss he didn’t get along so well with some of the miners from out of town—specifically, from the American South—and felt he wouldn’t be able to handle conflicts without a scuffle ensuing. Besides, he was a good miner and worked hard, earning a lot of bonus money, and didn’t he want to give that up.

It is somewhat ironic, then, where Roy eventually wound up: at the negotiating table on behalf of the union.

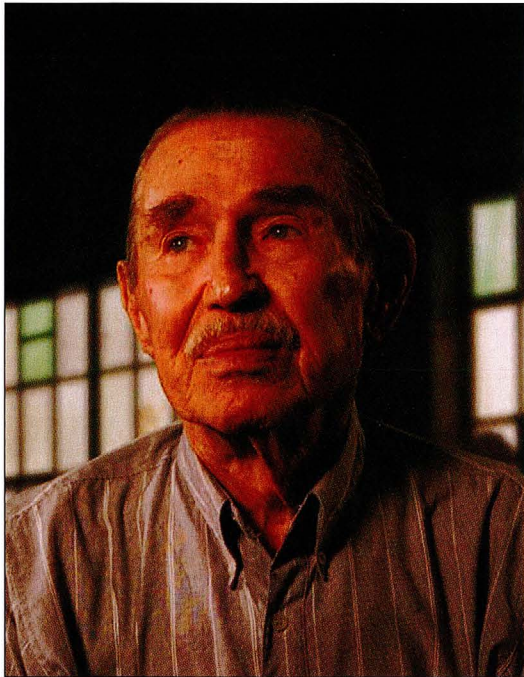
Roy became a business agent for the Superior Mine, Mill and Smelter Workers Local 938, organized in 1957. He worked on behalf of the union for six years, eventually moving over to the International Union of Mine, Mill & Smelter Workers IUMMSW. The Mine-Mill unions merged with the International Steel Workers of America in early 1967. A short time later, the country experienced its longest copper strike to date, lasting nearly a year. Union representatives and those working on behalf of Phelps-Dodge were ordered by President Lyndon B. Johnson to get in a room and not come out until the strike was settled. And Roy was there.

He admits that over the years unions of all industries have gotten a bad reputation for being greedy and immovable. But he is still firmly a union man, and says the good a union can do for a hard-working laborer far outweighs the negative. “If you have good labor relations, you will have good miners. They like to be treated like human beings,” he points out. “I think you have to find ways to work with management just like you have to find ways to work with the union.”

Though he learned a lot about the spirit of cooperation while working for the union, Roy is still a hard-charger who is not afraid to express his opinion. He admits his fellow miners probably remember him best as a “rabble-rouser who liked to drink and worked his butt off in the mines.”

Roy now lives in Phoenix with his wife, Frankie, and has six children. He is a lifetime member of the American Legion and Veterans of Foreign Wars VFW.

HARRY SCHEIER: ROOTS DEEP IN MIAMI



HARRY SCHEIER

Miami native Harry Scheier remembers the stories and advice passed on to him by his father, Joseph. An infantryman who was drafted to help hunt down Mexican revolutionary general Pancho Villa, Joseph had a hard and colorful life, which was reflected in both his anecdotes and his words of wisdom.

Two things stick out clearly in Scheier's mind when it comes to his father: a story about facing down a crowd of Ku Klux Klan members determined to march through the town of Miami, and a piece of advice that reflected some of the bitterness of Joseph's odd-job work experience.

The confrontation with the Klan came when his dad was still a single man, just coming off the hunt for Villa. The town's police chief, Barney Welch, heard that the Klan was marshalling its numbers just outside of town, getting ready to march through town at high noon. Welch decided he was going to try and stop the march, but he needed some help. He went around town looking for able-bodied men who would stand up next to him and stop the march. There were no takers—except, of course, Joseph, who was fresh off of chasing Pancho Villa and raring to go. Come noontime, Welch stood in the middle of the main street as the Klan approached. He fired his pistol to get them to stop, but they shouted out a warning that he had better get out of the way—one man wasn't going to stop them.

Then Welch pointed to Joseph, who was sitting on the bed of a flatbed truck with his hand eagerly poised on the handle of a fully

loaded Gatling gun. "He said, 'I'll take care of 'em, Barney,' and he would have, too," Scheier says. "But they turned around and went home, and that was the end of that."

The piece of advice Scheier still recalls to this day is not a sentimental one about loving thy neighbor or stopping and smelling the roses. His dad, who struggled with arthritis and bronchitis much of his life, was only able to work odd jobs around town, performing handyman services and carpentry work. Joseph cautioned his young son, Harry, that if you go out your way to help someone, sooner or later they are going to "dump" all over you.

The one case where that didn't seem to hold true in Joseph's life was when he faced down the Ku Klux Klan with Chief Welch. From that day forward, the two men became good friends. Scheier recalls Welch as being a well-dressed man, always wearing a suit but carrying a Colt .45 under his jacket. Whenever he and his father met Welch in town, Welch would invariably buy Scheier a double- or triple-scoop ice cream cone.

For Scheier, it is just one of many good memories he has of growing up in Miami, where he was born in 1924 "with the sound of the diesel generators from the Arizona Edison Company drumming in my ears." His home on Granite Street faced the old power station.

Scheier recalls playing with the Mexican and American Indian children in the neighborhood, children who were forced to go to segregated schools while Scheier attended Inspiration Addition elementary and middle school.

His house wasn't far from the segregated school, and Scheier couldn't understand why he couldn't go to school there with his friends. "When they put on plays at night, we'd stand on boxes and look through the window and watch. A lot of times they would invite my brother and me in and we'd sit right there and enjoy it right along with them."

Scheier, whose father was of German decent and mother from Austrian and Hungarian stock, acknowledges the discrimination that existed in Miami and the surrounding mining towns, but says that growing up, it never affected how he treated people.

It wasn't until Scheier was an adult working in the Miami Copper Mine that the town's underlying discrimination affected how people treated him.

After graduating from Miami High School in 1942, his father told Scheier to go to school or go to work. Scheier figured he'd had enough of school, so he applied for, and received, an apprenticeship in the electrical shop at the Miami Copper Mine. His older brother was a machinist apprentice at the Inspiration mine. In October 1943, both young men were called up to serve, so they joined the U.S. Navy. Scheier served as a Seaman First Class on the U.S.S. Independence, the only

all-night fighting carrier in Admiral William "Bull" Hallsey's Fast Carrier Task Force. Scheier was eventually promoted to Electrician 3rd Class, and was in charge of the ship's four big generators.

He was released from service eight months after the end of the war. Scheier returned to Miami and the Miami Copper Mine to finish his apprenticeship. He worked for the company and an electrical engineer until his retirement in 1985.

Though his work as an electrician wasn't as dangerous as being an underground miner, it was by no means stress-free. In fact, Scheier had to deal with a bigoted boss who, after finding out Scheier had married a Mexican woman, put him on a swing shift as a "troubleshooter" for all the electrical departments.

"He was trying to get rid of me, and he put me in as a troubleshooter, so I had to relieve all the different shifts," says Scheier, who recalls nearly a decade of working long shifts at all different hours. But there was a benefit to this job, unbeknownst to the prejudiced boss who gave it to him. Scheier became something of an expert on all the electrical areas of the mine, from the crusher to the power house to the shop area and the shaft pumps and motors—and not just at the main mine, but at Solitude and Old Dominion as well.

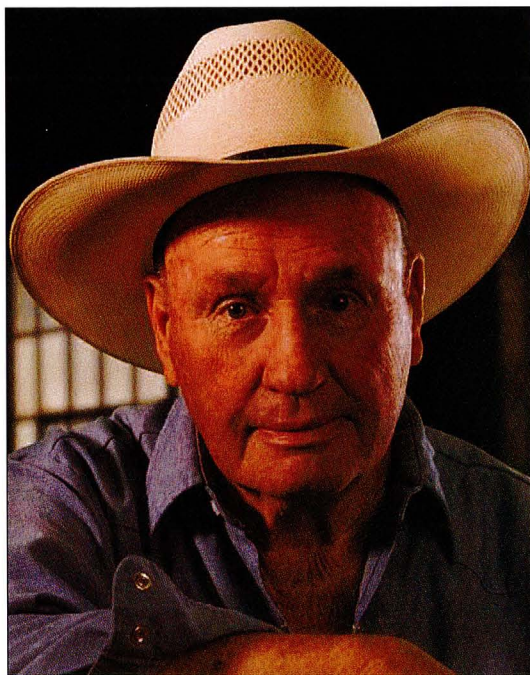
"In 1959 when they shut down, they were only going to keep one electrician," Scheier explains. He was a natural fit for the job, thanks to that troubleshooter assignment. "So they sent me out to Castle Dome to run the gantry crane," which he did until 1965, when the company decided to reopen the Miami Copper mine. Scheier became the head electrician for Miami Copper, overseeing the work both above and belowground.

Scheier retired in 1985. He may no longer have an interest in working for a mine, but he sees a great benefit in having a working mine in the community.

"That's a source of income, and that's what we're low on here," he points out. "We're trying to get any businesses we can in here. Mining can bring in other industries that they draw from, that would help as well. It's new industry we need." New industry, and new blood, he says. Young people, families moving into the community, will bring other businesses that will benefit everyone, such as department stores, restaurants and entertainment venues.

In a way, it would bring the town full-circle, back to the days of a rich and thriving community where people wanted to live and raise a family, a place to plant roots that were once fed by the ore underground. Scheier hopes to see that vitality return to the town where he was born and raised, and in which he plans to happily live out his days.

HARRY SMITH: A ROAD TO FREEDOM



HARRY SMITH

When people first meet Superior native Harry Smith, they make assumptions about his injury. When they discover that Smith spent years toting dangerous explosives from the rail station to the mine, they are more certain than ever that his hand was mangled in a terrible accident.

Which makes their surprise all the more amusing to Smith when he tells them he lost his hand in a car crash when still a toddler, and in his 28 years working for the mines in Superior, he never once had an accident.

Smith's dad did location and assessment work for the mines when he first came to Superior in the early 1900s. "My dad wasn't an educated man, but he could look at a rock and tell you what was there. He always had an instinct of where a vein would run," Smith says.

His father spent many years at the Belmont mine, pulling out mostly silver and a little copper and gold. The mine was located about two miles southeast of Superior. Smith recalls sitting in his dad's office at the Belmont mine as a teenager with two of his five brothers, listening in amazement as the news came over the radio that the Japanese had just bombed Pearl Harbor.

In 1925, the Smith family settled on a homestead of 100 acres about six miles outside of town. The ranch is what got the Smith family through the depression in the early 1930s. Smith's father held a 25-head permit for cattle, including milk cows; Smith's mom churned her own butter to help save money.

The ranch also sported chickens and a vegetable garden whose riches were canned by Smith's mother. "We didn't have a lot of money, but we got by," recalls Smith, who was one of seven children that had to be fed each day. "Mom made fig jam from our fig tree. We never had lunch; we always had a big breakfast and a big supper. Sometimes we could have a tortilla with beans or with fig jam and butter in the afternoon."

Smith grew up on a ranch and had a father who spent many years in the mining industry. But Smith, who describes himself as "more mechanical in nature," decided to take a different path for himself and, after marrying in 1946, moved to Eugene, Ore., with his new bride to work in a machine shop.

Smith spent nearly 10 years in the machine shop, where engines ranging from one cylinder to big diesels were constructed and re-constructed. He eventually became shop foreman. They might have stayed forever, if not for his wife's Vitamin D deficiency. On the coast of Oregon, hours of sunshine are a welcome but rare occurrence. So they chose to come back to sunny Superior.

Smith went to work for Magma Copper Mine in 1955, spending his first six months in the lumberyard, bringing up timber from San Manuel. He ran the first front-end loader that Magma ever had.

Smith drove every kind of truck the company owned, from Model As to a 1937 Ford pickup to a Ford half-ton. He spent a lot of time running "errands," whether it was picking up parts in Tucson or shuttling the general manager's wife back and forth to Phoenix. But his most dangerous assignment was the years he spent bringing explosives down from the San Pedro & Southwestern Railroad SPSR rail station at Paul Spur, located 10 miles west of Douglas, to the storage house at the mine.

From 7 a.m. to 4 p.m., six days a week, Smith would get the explosives order from the mine office, get the keys to the storage house, load the powder on a truck and bring it up to the shaft openings so the crew bosses could load it in before the rest of crew went underground.

The 50-pound boxes were a mix of special gelatin powder, and somewhat unstable, Smith says. A railcar full of 1,200 boxes of powder would take all day to unload, since the 12-foot truck bed could only carry 300 boxes at a time. And driving fast on the rutted dirt roads clearly was not an option.

While a small crew of men loaded the powder from the railcar into the truck bed, another crew was back at the storage house moving the older powder forward, so the newest shipment could be placed in the back. The storage could hold 1,500 boxes of powder, stacked to the rafters.

Later, the mine switched from its special gelatin to carbonate powder, which proved to be not only more stable, but more economical as well. One hundred pounds of carbonate pellets would cost the same as a 50-pound box of stick gelatin powder.

The carbonate came in 50-pound bags, which was pumped into a drill hole with a pressurized hose. The previous gelatin powder had to be put into a stick and then inserted into a drill hole before a blasting cap could be tamped down onto it. Sometimes the cap would be tapped a little too hard, causing it to explode prematurely and injuring or killing several miners.

The carbonate powder was far more stable and didn't need to be tamped, Smith explained. At its peak, the mine was using 44,000 pounds of carbonate a week, versus the 55,000 pounds of gelatin powder used previously.

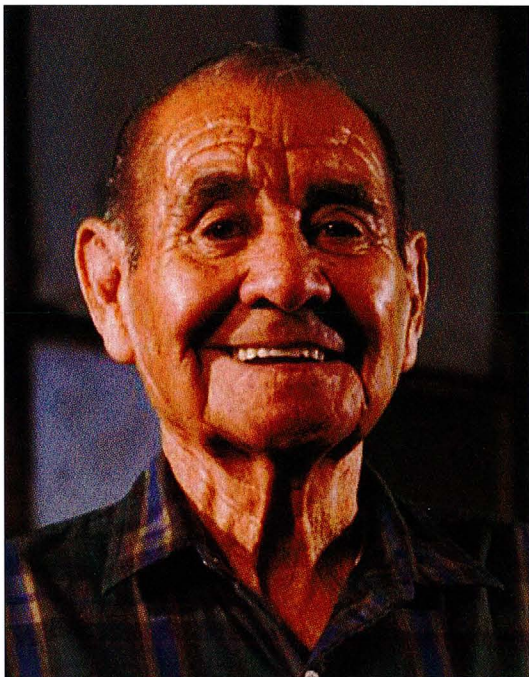
Many of Smith's bosses thought of him as a "company" man, meaning a manager or a boss, but he never was, and he turned down manager positions that came his way. He liked the fact that each day brought a different assignment. When he wasn't transporting blasting powder, he was driving all over the state on one errand or another for the company.

"I got to be moving all the time. I got to drive all over and stay busy. I'm the kind of person who can't sit still and do only one job," Smith explains.

Even after retiring from the mine when it closed down in 1982, Smith still found ways to stay busy. At one point, he served as a member of the town's Planning and Zoning Commission. Smith is concerned about future development in town and wants to make sure it "goes in the right place for the right reason." After all, his only child—a daughter—lives in Superior with her own two children.

"It's a nice town, but it could be a lot better," Smith asserts. "It's quiet and it's got great scenery. I'd like to see the population back up, get some more houses in here. Still, I wouldn't live anyplace else."

VINCENTE VALENZUELA: HARD BEGINNINGS, HARD LABOR AND FEW REGRETS



VINCENTE VALENZUELA

You could say Miami, Ariz., native Vicente Valenzuela is a graduate of the School of Hard Knocks. In fact, that's the only school he's ever graduated from.

Valenzuela's mother died when he was 6 years old, and he says his father was in and out of prison most of his life. His older sister was taken in by an elderly couple, and Valenzuela was given shelter by a family that already had a half-dozen children of their own.

Around 1932, when incumbent Herbert Hoover and upstart Democratic challenger Franklin D. Roosevelt were battling it out at the polls, the patriarch of Valenzuela's surrogate family got into a battle of his own at a local bar, and died a few days later of a head injury.

Valenzuela's sister convinced him to come and live with her at the boarding house owned by the elderly couple, and he did—for a time. He didn't like his sister's new "mom" telling him what to do all the time and eventually he ran away, but not before spending a lot of time with workers from the Miami copper mine who rented rooms at the boarding house.

Valenzuela lived a transient lifestyle for much of his youth, sleeping where he could find shelter, eating where he could find a meal. He and his gang of young friends used to eat old candy thrown out back by the local candy shop. Eventually he decided to get a job, and worked for a time at the local movie theater as a janitor. But the dull work didn't hold his interest, and he began to look for something a little more "challenging."

He eventually joined the U.S. Conservation Corps, spending a year in the Buffalo Crossing camp in Arizona's White Mountains. After his first year was up, he went back to Miami, but there was still no work available, so he returned to the Conservation Corps, spending his final year with the organization in Yuma.

He again returned to Miami, where his dad was living after being released from jail. Valenzuela tried to find steady work, but was still considered too young to be hired on at the mines.

He hung around a group of day laborers for a time, picking up odd jobs here and there. Then one day a boss from the Inspiration Copper smelter came looking for workers, and Valenzuela's luck seemed to have turned as he finally got a steady job.

But his luck didn't last for long. Valenzuela got transferred to work in the mine, and less than a week later, his draft number came up. He spent four years in the infantry before once again returning home to Miami. Mining—and now the military—were all he knew.

Valenzuela was the kind of worker that mining companies loved: He did his job and didn't complain. He became a kind of role model for some of the other Mexican miners, who saw his go-along-to-get-along attitude as a way to fly under the radar and not be bothered by the mine bosses.

While many of the miners tell tales of taking old discarded machine parts and timbers and incorporating them into their homes, Valenzuela found a different use for one of the mine's castoffs. A local restaurant, called The California, would give him a free pie in exchange for a sack or two of sawdust created from lathing shaft support beams.

A self-admitted loner, Valenzuela shared his secret—and his pies—with no one.

Valenzuela eventually joined the union, because the other miners told him it would be good for him. "The union was real nice to me, they never bothered me," he says. "I just kept going with whatever the union said. If I had more education, I would have been all right, but all I could do was go along with it and do what I could to help [the union]."

The union selected Valenzuela to be a sort of "goodwill ambassador" to the miners who had suffered accidents and were in the local hospital. "Every Thursday they'd give me cartons of cigarettes to take to the hospital and give them to the people there," he recalls.

Valenzuela spent most of his life working in the mines. "I never did make the money I wanted to because I had no education," he admits. Mine supervisors occasionally offered him the opportunity to study a trade, such as welding, so he

could earn better pay or get out of the rough labor work. "But I never cared for it, I didn't have it up here," he says, tapping his temple. "I said forget it, as long as I had my hands."

As it turned out, Valenzuela didn't always have his hands to rely on. While working in the mine one day his left hand got caught in a conveyor belt, crushing his fingers. He lost his pinkie as well as his ring finger down to the first knuckle.

It was a year before he returned to mine. He was unable to do some of his former work, but he could still use a shovel, and that's what he did. He eventually retired in 1984, but even retirement couldn't still his restless spirit.

"I'm the moving type, I can't sit still for very long," he says with a laugh. "I keep busy doing a lot of things. I make wooden Christmas trees in the garage, make a little money selling them." He occasionally enjoys visits from his three children—two boys and a girl—who are clearly the pride of his life.

Valenzuela says he has no complaints, despite his challenging upbringing. Many people had their families in their lives to keep them on the straight and narrow path—but not so for him. "I could have been a drunk, I could have smoked marijuana, but in my mind I never had a thought to do that," he says. "I made it on my own, and I never got into any trouble.

"I got a good family, I'm doing alright, and I hope I can keep going for a while."

GLADYS WALKER: TELLS OF LIFE IN SUPERIOR THROUGH COLLECTED STORIES

If you sit down for a chat with Superior resident Gladys Walker, be prepared to spend some time listening to stories—funny stories, sad stories, and stories that detail life in Superior over the span of 80 years.

Born in Lano, Texas, Walker and her family moved to Superior in 1923 when she was 5 years old. So while she can't be called a "native" in the true sense of the word, no one can dispute the fact that Walker is irrevocably tied to this small, formerly booming mining community. She has witnessed its heyday as well as times of hardship and internal conflict. And she has documented much of the town's history in a series of articles written and published by Arizona newspapers over the course of several years.

Walker and her five siblings grew up in what was commonly referred to as the "Mexican side" of town. It was what the family of four—which soon grew to six—could afford.

Her father was hired on as one of the first watchmen of the newly built smelter, which started operation in 1924. He was one of the few men from the Mexican side of town who owned a car a Model-T and drove to work. The rest of the family, much like the rest of the town, got around under their own steam.

Since they were only a couple of streets away from the Spring Garden Market, Walker's mother would sometimes allow her to walk to the store to pick up extra eggs, bread or milk. Walker points out that the market building is still there today, and much of the equipment from the original store can still be found inside as historic "relics."

Walker didn't graduate from Superior High; she left school in 1933 to marry. She was only 17. Her husband, Barney, was a miner. That is, when there was work to be found at the mines.

After the couple married, they moved into a 12-foot by 14-foot tent house located on some land owned by a relative of Barney's. It was the start of the Depression, and the two worked when and where they could find work. Walker was paid a dollar a day for mending linens at the Magma Hotel. She would sit on the hotel's patio and sew from 10 a.m. to 3 p.m.

Barney eventually was hired on at the smelter, working in the electric shop, and in 1940 the couple and their 1-year-old son moved into their first—and only—house. Walker still lives in that little house on Neary Avenue.

When the war came, Barney came down with double pneumonia. Before the year was up, husband and wife both had contracted typhoid fever and were moved to a quarantine facility in Florence. Walker's mother took care of the couple's son while they stayed at the facility for 48 days.

Barney was deemed too disabled from his back-to-back illnesses to be drafted, so he went back to work at the smelter while the war raged overseas. Their saving grace, Walker says, was the mining company. After being off work for more than two months, Magma still came through with Barney's annual Christmas bonus of \$100.

"That saved us," she says. "The mine was our security blanket."

For the small family of three, the mining income was the only income for some time. Walker stayed home and took care of their son. But she found other ways to stay busy as well.

Since she hadn't finished high school, Walker decided to complete her education via correspondence school. She received her high school diploma from the American School in Chicago, and afterwards studied psychology, business law, and journalism.

"I took newspaper journalism with the Newspaper Institute of America, and graduated from that," she says. "I think it was 1955 when I got the opportunity to work for *The Arizona Republic* as a correspondent for the Superior area. That got me started on my writing career."

Walker wrote general news and features stories—but it was the features stories about her town that Walker loved writing

the most. She wrote for the *Republic* for about seven years, and at one point she simultaneously did an 11 month-stint as editor of the *Superior Sun*.

Her biggest story—and probably the most difficult one personally—was the Magma Copper strike of 1959. When the Mine, Mill & Smelter Workers Union struck in August of that year, it was the first strike in the mine's history. Walker, who was working for the *Republic* at that time, was asked to cover it. She did her job, but with mixed emotions.

"Magma was very involved in the township; the company helped build schools, the library, the hospital," she points out. "They took an interest in the well being of everyone. We loved our Magma Copper Co."

Walker made a conscious effort to make the story as fair as possible, and made several phone calls to the mining company's business office to try and get an official comment about the strike—but to no avail.

When the article ran in the *Republic* with a quote from Magma Business Agent Rudolph Garcia stating, "The only comment I have to make is no comment," Walker got a reaction she wasn't expecting. Garcia phoned her—at first angry, and then later apologizing, explaining he hadn't realized she worked for the newspaper. From that day forward, he had an open door policy with Walker. Any quote or any information she needed was hers for the asking. Walker and Garcia eventually became good friends.

The strike lasted until December, and Walker recalls it as "a terrible time. Families were signing up for food stamps." Her husband, Barney, had been promoted to foreman in the electric shop, and he was given a pass to get through the picket lines.

"He hated to go through the line and see his friends out there," Walker recalled. "It was winter, freezing cold and raining, and Barney would come home with tears in his eyes telling me stories about his friends on the line, and how he hated to cross it." But he had a family to support, and could see, every day, what the alternative was.

The strike left a sour impression of the union in many of the workers' minds, despite the benefits that were ultimately gained. Walker said that at one point a group of workers and townsfolk organized a de-certification election to try and get the union out.

"The whole town was torn apart—it pitted fathers against sons, brothers against brothers, entire families weren't speaking to each other," Walker said. "It was awful."

These are just some of the moments—both good and bad—that Walker captured in her writings. Though she eventually left the field of journalism and had successful careers as a clerk for the Superior Court and as an employee of U.S. Post Office, the writing bug never really left her.

After she retired, Walker took her old scrapbooks of stories about the town of Superior and its varied personalities and went to work creating a book featuring her articles from the *Arizona Republic* and the *Superior Sun*, as well as some of the numerous photos she had collected along the way. The small press run of "Copper Country Folklore: A Scrapbook of Memories," quickly sold out after its printing in 2003, but a copy is available for checkout at the Superior Public Library for those interested in reading more about the town's history.

Many people have asked her over the years why she never left Superior, never made a newspaper career for herself working in Phoenix or some other large city. Walker's answer was very simple: "This was a very good place to raise a family. And I had a lot of fun along the way," she said with a laugh.

Gladys Walker passed away on March 6, 2006. She is survived by her youngest brother and a large extended family of nieces, nephews, great-nieces and great-nephews.

JOE YBARRA: 'OLD-TIMERS' STILL HERE EVEN AS NEXT GENERATIONS LEAVE

Isabel and Joe Ybarra are typical of couples in Superior who married young, saved where they could, raised a large family and sent their children off to bigger and better things while they remained in a town where—like the television show jingle—"everybody knows your name."

Like many other long-term residents who put roots down in Superior in the 1930s and '40s, the Ybarras see no reason to leave. They still live in the home that Joe built in the south part of town, when three-bedroom homes were selling for \$15,000. They still have friends and siblings living in town. Isabel is an active volunteer in the community and Joe, a retired mine worker, likes to do odd jobs around the house and for friends and family members.

And yet these couples, who came through the Depression, survived World War II and rode out the boom and the bust of Superior's mining industry, never expected their children to follow in their footsteps. Their children, more often than not, would not lay down their own roots in this small town where many "old timers" admit whatever changes have been wrought over the years have not been for the better.

Isabel was born in a small community near Cottonwood that no longer exists. She and her eight brothers and sisters moved to Superior in 1938 to live with an uncle and his wife after her parents died. The younger children, like Isabel, were allowed to go to school, but the older ones had to go to work in order to help support such a large combined family.

Joe was born in Miami, Ariz., in 1927. When the Depression hit, Joe's father moved the family back to Mexico where there was still work to be found, and the children could still attend school.

Joe's father returned to the states after the job market stabilized and in 1934, he brought the rest of the family back to Arizona—but this time, they settled in Superior.

Joe dropped out of school when he was a junior at Superior High School. He knew that once he turned 18, he'd be drafted. In January 1945 he began working for Magma Copper Co. in the mine yard, since he was too young to get an underground job. At that time, the company was hiring as fast as it could, because it was losing workers to the draft at an astounding pace.

"They needed workers pretty bad," Joe says. "Anybody who came in needed the job, and regardless of what training you had, they needed the personnel."

By April that year, Joe received his draft notice and he was off to the service. He was sent to Germany after most of the fighting was over to be a part of the Army's occupation forces. He stayed 10 months and despite being offered a commission to stay longer, Joe chose to come back home to Superior and to the mining job he knew was waiting for him, thanks to a government guarantee.

In October 1946, Joe went back to work at Magma, although being not-yet 21 years old, he still couldn't work underground.

"When I got back, my job was already filled, so they tried to squeeze us into whatever phase of the mining operation that was available," he explains. He spent time in the mill, at the smelter and on a crew that replaced cracked railroad ties that led to Magma Station, where the mine's lumber was offloaded.

The year he returned, Isabel was a junior at Superior High School. They married in July 1948 after she graduated. Isabel stayed home to raise their children—three boys and a girl—while Joe continued to toil in the mines.

When Joe was finally able to work underground—where the real money was to be made—he started out as a mucker and eventually made his way up the ladder to level boss. He quit once and was fired once, but in the end he spent nearly 33 years of his life working for the Magma Copper Co. until the mine closed in 1982.

"I was very lucky, in a way, that I had a job. After the war ended, jobs were hard to get," he points out. "Here in the mine, you got good pay and steady work. And it didn't matter what the weather was like outside; the mine was always the same climate: hot and dirty."

When asked what job for the mine he liked the most, Joe laughs and says, "Whatever job paid the best."

When he first started working in the yard in 1945, Joe was paid \$5.35 a day. When he got back from his military service, that same job was paying \$7.32 a day. After the union was formed in 1959 and the first strike was held, the mine started paying by the hour. By the time the mine shut down in 1982, miners were making \$10 to \$12 an hour. When he went underground, Joe made \$9.76 a day as a mucker, and miners were making \$10.88 a day.

Many miners counted themselves lucky to have made it that far. A frightening majority of them were killed in accidents or, more commonly, died from miner's consumption. Joe's father, who started working in the mines of Mexico when he was 15, died when he was only 49.

"In my dad's day, and early on for me, safety and health were not a major concern," Joe says. "Miners didn't wear gloves or masks, and they were drilling dry and breathing in a lot of dust every day."

Magma built a hospital in town, staffed by company doctors. It became a place of sadness and joy, where ailing miners left the world even as their offspring were brought into it.

There used to be community-building activities every weekend, whether it was a movie or a boxing match at the Magma Club, a dance at the VFW Post 3584, a small fiesta at one of the local Catholic churches, or a card game at the Los Reyes Club.

"We created our own entertainment," says Joe, adding that, "in Superior, we had about 13 bars."

Everybody in town knew everybody, and a good percentage of the population was related to each other. Joe's two surviving brothers still live in town. Like Joe, all three worked in the mines.

Everybody still knows everybody in town; that much hasn't changed, Isabel says. But what has changed is that vitality and activity that made the town come alive. Without that buzz of energy, there was little to attract the younger generations ... little to make them want to stay.

Three of the Ybarras' four children graduated from college, and one went into the field of sales. Those children are now raising their own children in the Valley. They often visit Joe and Isabel in Superior, but there is little, if any, thought about staying. Joe and Isabel would like to see younger families come back to Superior, but acknowledge that this will only happen when they are given a reason to come, and to stay.

Until then, the "old timers" will continue to chat about the old days, catching up with news about each other's children and grandchildren, talking about the weather, and dreaming that their town will once again become a place bustling with diverse shops, entertainment venues, medical facilities—and the people who will use them.



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May 23, 2005

Dear Nyal:

Enclosed are several copies of our first Social and Environmental Report, outlining our activities for 2004. It highlights the contributions Resolution Copper is making to our host communities and the environment, and outlines our hopes for the future.

Thank you again for your continued support.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jennifer Russo', is written over the printed name.

Jennifer Russo
Corporate Communications Director

RESOLUTION COPPER COMPANY

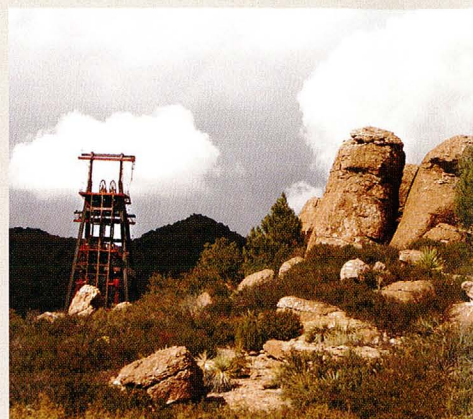
Developing the Mine of the 21st Century



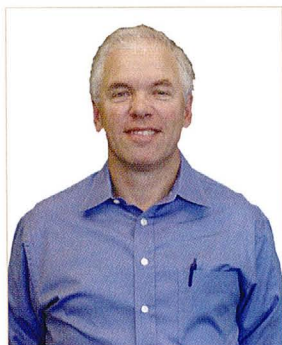
2004
Social & Environmental
REPORT

TABLE OF CONTENTS

MESSAGE FROM THE VICE PRESIDENT	2
PROJECT PROFILE	3
COMMUNITY OVERVIEW	
Superior, Arizona, USA	4
Globe-Miami, Arizona, USA	5
SOCIAL AND CULTURAL ASSESSMENTS	
Comprehensive Community and Statewide Surveys	6
Comprehensive Student Survey	6
COMMITMENT TO SUSTAINABLE DEVELOPMENT	7
Economic Development	8
BUILDING COMMUNITY RELATIONS	9
Community Outreach	9
Community Investment and Charitable Giving	10
Educational Support	11
Summer Internships	12
Local Partnerships	13
ENVIRONMENTAL STUDIES	15
Environmental Initiatives	15
Project Reclamation	16
Health, Safety and Environmental Policy	17
Policy Land Use Issues	17
CONCLUSIONS	18



WHAT IS THE MINE OF THE 21ST CENTURY?



Many companies speak of "corporate responsibility." But what does that mean? Is it merely a politically correct gesture to bolster public relations, or does it create real value?

As you will read in this report, Resolution Copper is committed to stewardship of the land and investment in the community, not only because it makes good business sense, but also because social and environmental responsibility are the foundations of sustainable development. To us, "The Mine of the 21st Century" is more than a technological wonder that profitably extracts the minerals necessary to meet global needs. It is a catalyst for continued economic, social and environmental renewal.

Like our parent company, Rio Tinto, Resolution Copper recognizes that sustainable development is built on a complement of economic, social and environmental performance measures. They are not separate issues. Each is a vital component of an integrated project.

For many years, the communities described in this report were classic "company towns," dependent on the vagaries of a boom-and-bust economy. Each also suffered from degradation of its natural environment, magnifying the negative ramifications of traditional mining practices. Resolution Copper is taking an entirely different approach.

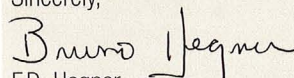
We believe that business has a duty, together with governments and society, to meet the needs of the current generation without compromising the ability of future generations to meet their own needs. To that end, we are

working with our local communities to not only build a copper mine, but a more prosperous community from which to draw products, services and employees—now and in the future. While we want to be a major part of the area's economic development, we do not want to have a disproportionate influence. We want to support the development of both a diversified economy and the area's natural resources. Our goal is to create healthy communities that will prosper well beyond mine life.

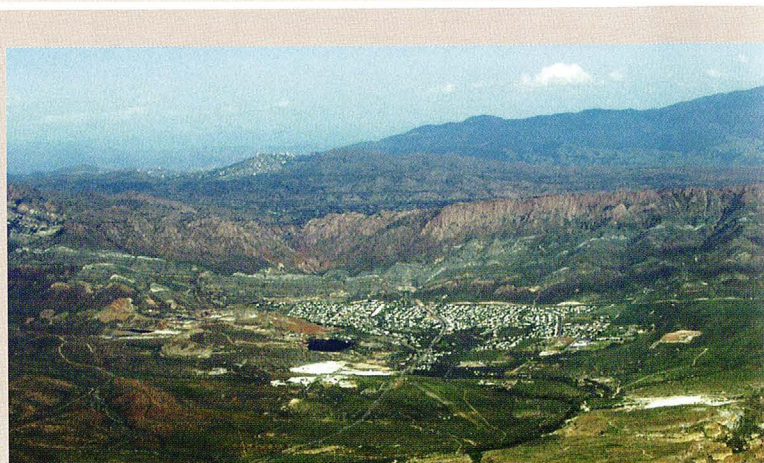
The Resolution Project is in the early stages of pre-feasibility and faces several technical challenges. There are also conflicting land use issues that will hopefully be resolved to the satisfaction of all stakeholders in 2005. Mine development will be a lengthy and thoughtful process that will involve a commitment to best practice, best science, and the best people. A commitment to communities will remain at the forefront of our efforts.

This is what the mine of the 21st Century is truly all about: a commitment to people, health, safety and environmental excellence, as well as economic success. I invite you to use this report as a means of exploring Resolution Copper and discovering what we're doing to make that mission a reality.

Sincerely,


F.D. Hegner

Vice-President/General Manager



PROJECT PROFILE

The Resolution Project is located three miles east of Superior, Arizona, in the historic Pioneer Mining District. Exploration conducted in 2001-2003 indicates the presence of what may be one of the the largest copper resources ever found in North America and possibly worldwide. This deposit is both very deep (over one mile below the surface), very hot (170 degrees Fahrenheit), and is situated in a high stress environment where ground pressure exceeds rock strength. However, it appears to be of significantly good grade, with minimal levels of impurities.

The project is a joint venture between BHP Billiton and Rio Tinto, the two largest mining companies in the world. On May 1, 2004, Resolution Copper, a subsidiary of Rio Tinto, became manager of the project. To date, Resolution Copper has invested more than \$35 million. If the mine is ultimately developed, an excess of \$1.5 billion will be invested between both companies.

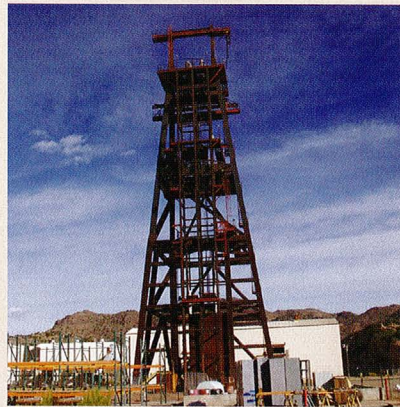
The project consists of two sites. The West Plant Site was the original location of milling and smelting activity and is the focus of reclamation efforts undertaken by Resolution Copper. The project study site, located at the Magma Mine's Shaft Number 9, is the focus of future development.

The mine will employ state-of-the-art technology that will remove much of the risk associated with traditional mining jobs. It will be completely underground with no open pits or waste rock piles. If developed, Resolution Copper may use a mining method called block caving, which uses gravity to extract the ore. It is anticipated that any copper concentrates will be transported off-site for smelting.

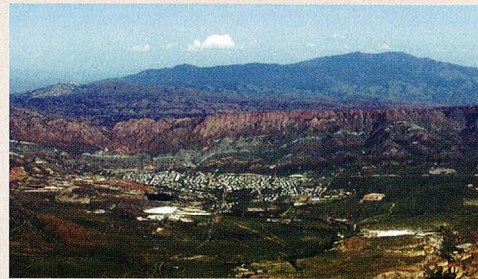
If evaluation and feasibility studies are successful, production will likely begin sometime in the next decade. The mine could produce more than 400,000 tons of copper each year during an expected life span of at least 25 years. This abundant copper production will not only have significant positive effects on current copper deficits, but also will result in considerable new economic wealth for local and regional economies.

The Resolution Project will have a major impact on the region and the state of Arizona through direct and indirect job creation. It will result in nearly 1,000 construction jobs

and 400 to 600 full-time positions. We also calculate that for every full-time person hired at the mine, the state and regional economy will grow by three to four additional service jobs. Resolution Copper will also offer financial support for educational, recreational and other initiatives in our host communities and statewide.



The Magma Mines #9 shaft at the Resolution Project.



Aerial view of the Town of Superior.



Initial setup of a large rotary rig.

SUPERIOR, ARIZONA, USA

Superior is located in Pinal County, Arizona, about 65 miles southeast of Phoenix and 97 miles from Tucson. It has a long history of copper and silver mining that took place primarily on lands lying east of the town. It is still considered one of Arizona's principal mining towns and is located in one of the most prolific copper-producing regions in the United States.

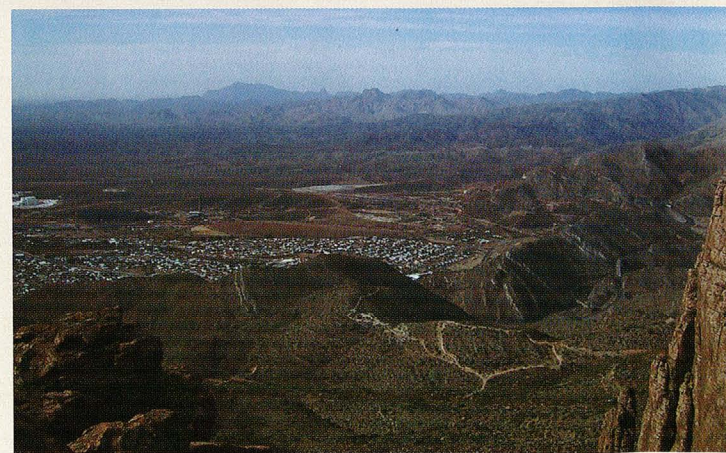
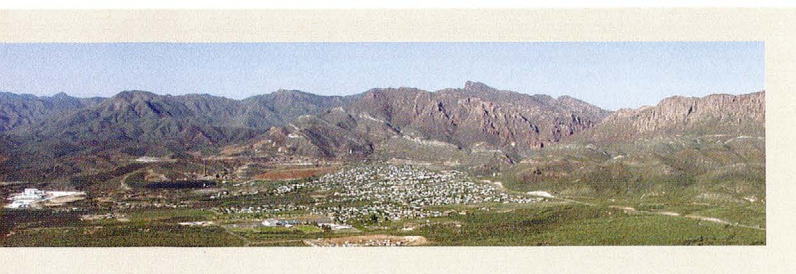
While Pinal County is currently experiencing significant growth, it struggles with a number of issues. Unemployment levels have been above the national average, due largely to a decline in the mining and agricultural employment sectors. Many communities in Pinal County exhibit high poverty levels and proportionately low per capita income in comparison with Arizona State averages and education levels are also below the national average.

Superior's elevation at 2,882 feet above sea level, coupled with its location on Highway 60 between Globe and Phoenix, make it an ideal location for recreation and tourism. The town boasts many unique landforms and attractions, as well as several properties listed on the National Landmarks Register of Historic Places, including the Boyce Thompson Arboretum, Devil's Canyon, Magma Hotel and Queen Creek Bridge.

The town is part of the Central Arizona Association of Governments District (CAAG). Both the town and the CAAG District have undertaken aggressive initiatives that involve marketing the area as a regional tourism destination. Resolution Copper feels confident that it can be a key partner for the town and the region in the realization of this goal.



On May 1, 2004 Resolution Copper transitioned to Manager of the Resolution Project. The company marked this milestone with a special community event - an ice cream social featuring local entertainment at the Superior site. Above: Local officials and company personnel take part in the ribbon cutting; Sipie and his Big Band sound kept the crowd on their feet.



GLOBE-MIAMI, ARIZONA, USA

Though Globe and Miami are very different in many ways, the two are often referenced as Globe-Miami. Like Superior, Globe and Miami have strong mining roots. Originally attracted by silver, many people remained due to the discovery of what became the area's primary mineral resource, copper.

More than 20 percent of the employment in Globe and Miami is related to mining and copper production, mainly smelting, refining and rod production. Both Globe and Miami have been adversely impacted by the industry's downturn. Similar to Superior, Globe and Miami struggle with lower education levels and higher unemployment and poverty rates compared with the state average. Globe's local tourism industry has been enhanced by a \$50 million investment by the federal government for recreational campgrounds and amenities at nearby Roosevelt Lake. Both have a historic downtown that host galleries, antique shops, museums, theatres and restaurants.



Town of Miami.



Center for the Arts.



Apache Day celebration.



Old Dominion Mine.

COMPREHENSIVE COMMUNITY AND STATEWIDE SURVEYS

Resolution Copper recognizes that understanding the needs and challenges of our host communities is the first step in helping these communities develop in a sustainable way.

More than 1,000 residents - political, business and community leaders living in Superior, Globe-Miami and the greater Phoenix community - participated in a series of comprehensive public opinion surveys in 2003/2004 under the direction of a nationally known expert. These surveys verified the importance of copper mining to Arizona's economy. One hundred percent of Superior's residents, community leaders and young adults agreed that copper mining is essential to the future of Superior. Eighty-seven percent of residents in the vicinity and 78% of all Arizonans agreed the mine would have considerable positive impact on state and local economies.

Arizonans also want to see proactive environmental stewardship, a commitment to local hiring, development of sustainable communities and worker safety as core values. Other priorities identified by survey participants included job security with good benefits, operational efficiencies, and adherence to environmental regulations.

Establishing a baseline of information is not only helping Resolution Copper focus its available resources, but it is also providing valuable information as we develop the company's business plans and decision-making process. The information is also aiding us in identifying partnerships that are beneficial to the communities we serve.

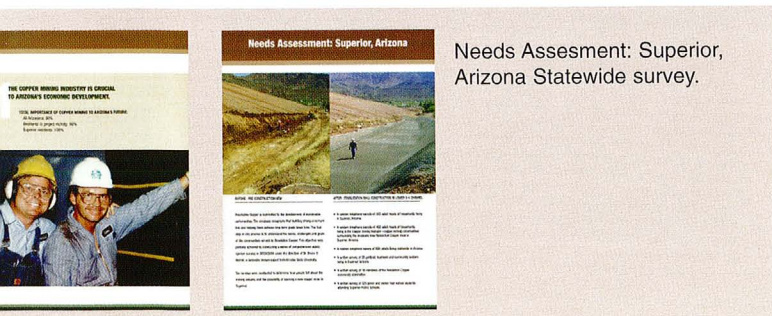
COMPREHENSIVE STUDENT SURVEY

To assess future educational and student needs, Resolution Copper collaborated with the Superior Unified School District to conduct a comprehensive survey of students in the district. In addition to gauging their views on pressing academic and nonacademic issues, we also sought to better understand how students perceive mining and the mining industry. Their

opinions are important to us. Resolution Copper's unique timeline—the project is still more than a decade from startup—means these students will likely constitute a significant part of our future workforce.

Ninety-five percent of all Superior Middle and High School students (225) participated in the project by completing a questionnaire. Some of the relevant findings:

- Nearly two-thirds of students do not plan to be living in Superior five years from now, mostly because they believe they will be away at college or because there will not be enough jobs.
- All students surveyed believe that mining is essential to Superior's economy.
- Nearly 70% said they do not plan to work in the copper mining industry.
- Just over 10% said they might not graduate.
- More than 85% plan to attend college.
- One-third said they would attend a trade school sometime in the future.
- Less than half say Superior is a good place to raise kids.
- Just over half say Superior has the potential to become a better place to live in the future.
- Three-fourths of all students' parents or guardians work outside Superior.
- Students feel they are getting a good education in Superior, but there are concerns about the quality of instruction.



Comprehensive student survey.

We believe that being a responsible company means embracing a commitment to sustainable development and balancing economic success with social and environmental responsibility.

We intend to give real-time meaning to the concept of sustainable development through our actions. We hope to demonstrate the mutual benefits of our commitment to people, occupational health and safety, and environmental excellence. Specifically, we are already implementing sustainable development principles through these efforts:



Bruno Hegner, Vice President and General Manager of Resolution Copper (far right), with local state and federal officials at the company's initial open house in February 2004.

We think sustainable development principles provide the best framework for understanding how social, economic and environmental factors influence the future of our planet and our neighborhoods. As such, we are working with ecological, environmental and community groups to help build sustainable communities in Superior and its neighboring towns. These efforts are based on three principles:

Mutual Respect—This is key to forming lasting, beneficial relationships between Resolution Copper Company and local communities. It requires ongoing communications and realistic expectations on both sides.

Active Partnership—This is how Resolution Copper works with local communities, user groups and governments. We seek mutual commitment based on trust and openness to reach objectives that will benefit everyone.

Long-Term Commitment—We hope to build a sustained, active relationship with Superior and its neighboring communities. We want to work together to further enhance the quality of life for Superior residents.

Through development of the Resolution deposit in a manner that is guided by our commitment to sustainable development, we believe we can make an important and lasting contribution to the economic prosperity and social well-being of the Town of Superior, Pinal County and the state of Arizona.

- Engaging our host communities and key stakeholders in ways that exemplify mutual respect, active partnership and long-term commitment.
- Ensuring high environmental, social and community standards in everything we do, including the development and implementation of full closure and rehabilitation plans.
- Ensuring that sustainable development outcomes are an integral part of the way we plan our business and make decisions.



Rio Tinto Sustainable Development Report.

ECONOMIC DEVELOPMENT

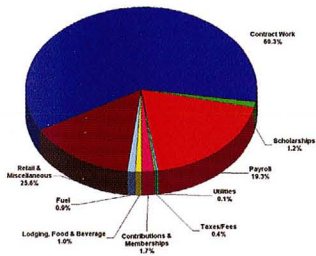
We recognize that the benefits of large-scale mining projects do not impact every citizen of the area automatically. We are working with the communities to create a diversified, self-supporting economy which will continue to benefit the region long after the mine has closed.

In October 2004, more than 120 people attended an economic development forum hosted by Resolution Copper in the Town of Superior. The forum's attendees, including Superior business owners, community leaders, and elected officials, received an overview of the Town of Superior's General Plan, an update on the Resolution Project, and an economic development presentation provided by the Arizona Department of Commerce. These opportunities included job training grants, enterprise zone development, planning grants, road construction, low-interest home loans, environmental cleanup grants and private activity bonds.

Participants agreed that creating and maintaining a strong local community would be critical to the Town's success. Going forward, the citizens of Superior, key elected officials, Arizona Department of Commerce, Resolution Copper and other interested parties will focus on matters affecting the development and future competitiveness of the area, as well as expanding upon the vision and goals outlined in the Town's General Plan. We will also be collaborating on grants available to local communities through state and federal agencies.

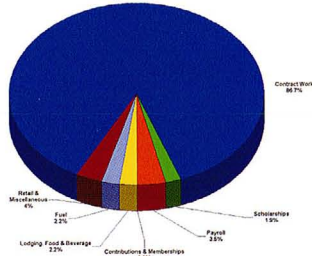
RESOLUTION COPPER COMPANY
Detail of Expenditures as of November 30, 2004
Town of Superior, AZ

Total 2004 YTD Spend: \$429.6K



RESOLUTION COPPER COMPANY
Detail of Expenditures as of November 30, 2004
Towns of Claypool, Globe-Miami, and Kearny, AZ

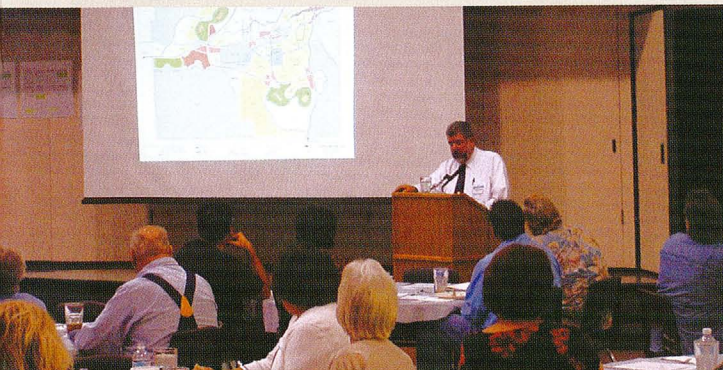
Total 2004 YTD Spend: \$546.2K



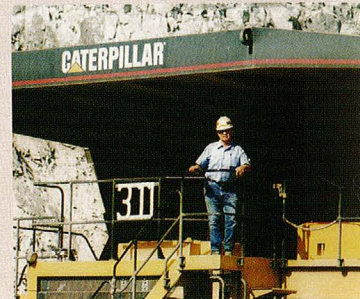
Resolution Copper has invested over \$975,000 in Superior and surrounding communities. The charts above show the allocation of those funds.



Joe Yuhas, deputy director for the Arizona Department of Commerce, talked about the many services available throughout the department. Superior Mayor Michael Hing (podium) served as moderator at an economic forum sponsored by Resolution Copper in 2004.



Roy Chavez, town manager for Superior, presented Superior's General Plan and described the Town's blueprint for the future.



BUILDING COMMUNITY RELATIONS

COMMUNITY OUTREACH

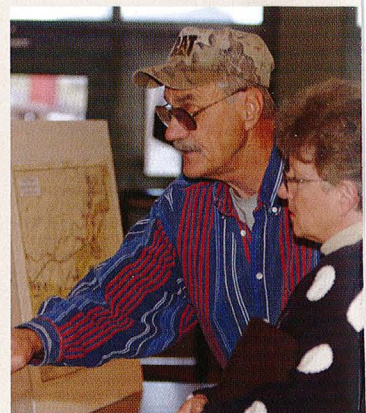
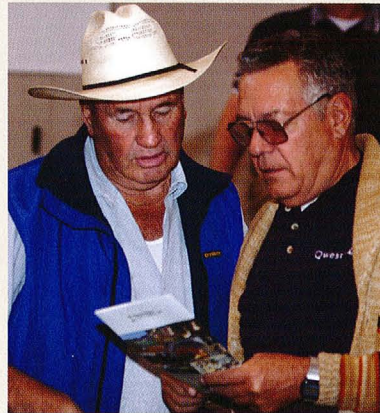
Resolution Copper believes the people of the communities most affected by the mine must see and understand its potential benefits in order to support it and make it successful.

Our company has made an enormous effort to develop strong community relations with the municipalities of the area. Our goal is to prosper together and bring about positive change. Resolution Copper is already an active partner with many local organizations, and we offer support on issues that affect the quality of life for Superior residents:

- Awarding scholarships to graduating high school seniors pursuing a higher education in science, engineering and business at Arizona universities.
- Sponsoring an after-school educational program at the Boyce Thompson Arboretum.
- Partnering with organizations such as Arizona Game and Fish to explore opportunities for improving the quality of bird life and avian habitats and enhancing the conservation value of our private lands.
- Forming community committees that are helping Resolution Copper decide how to best support the local communities.
- Evaluating vocational training opportunities to help develop a qualified workforce.

Resolution Copper has conducted an ongoing dialogue with community leaders and other stakeholders in Superior and Globe-Miami to advise and consult with us on social, economic and environmental needs. In addition, we have held a series of meetings and community open houses to give local residents an opportunity to learn more about our project and get to know our staff.

Key Resolution Copper personnel gave nearly 40 presentations in 2003-2004 to various groups statewide. This included students in junior and senior high schools throughout Arizona, Superior Chamber of Commerce, Globe-Miami Chamber of Commerce, Wildlife Center at Adobe Mountain and People for the West. Resolution Copper personnel are active members of various organizations in Superior, Globe-Miami and the greater Phoenix community. The company also conducts media tours, produces quarterly newsletters and maintains an active Web site as part of its commitment to keep our communities informed.



Superior residents review information about Resolution Copper at a company-sponsored open house.

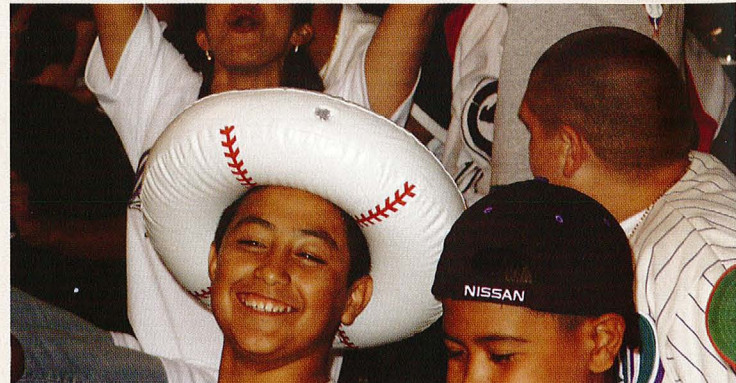
COMMUNITY INVESTMENT AND CHARITABLE GIVING

Resolution Copper is committed to giving back to its host communities and supporting them in ways that improve long-term quality of life. Though the project is in the early stages of evaluation, it is gratifying to know that the company's presence is already having a positive impact. We are also pleased to be supporting priorities the community has identified, such as education, youth activities and the beautification of the Town of Superior.

We support organizations that focus on building stronger communities, giving priority to programs that promote economic development, support job training and provide amenities for our local communities. This also includes support for arts and culture, youth recreation, and civic projects, as well as assistance for organizations providing basic human essentials for those in need.

These groups are among the direct recipients of Resolution Copper's contributions in 2004:

- Superior Food Bank
- Wildlife Center at Adobe Mountain
- Superior Chamber of Commerce
- Superior Boy Scouts
- Superior Little League
- Apache Leap Mountain Festival
- Audubon Arizona
- Phoenix BoulderBlast
- Boyce Thompson Arboretum
- Superior Optimist Club
- Superstition Search and Rescue
- Gila Educator Conference



Pictured Above: Superior students and Resolution Copper personnel enjoyed a fun filled night at Bank One Ballpark. Raspberry the clown entertained kids of all ages at a company-sponsored function for the community.



Dave Lira and his wife, Verna, joined in the celebration at the Superior High School Football Champions 50-year reunion, of which Resolution Copper was a sponsor.

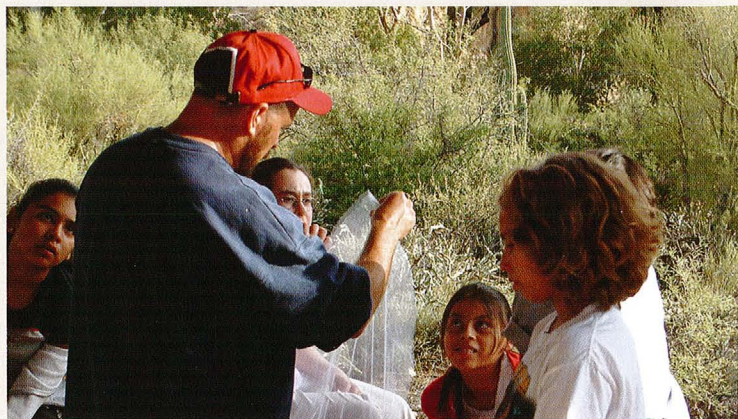
LOCAL PARTNERSHIPS

A vital component of our community outreach program involves forming partnerships with local organizations that share and promote our social and environmental values. Two such partners are Boyce Thompson Arboretum and Audubon Arizona.

The Boyce Thompson Arboretum is a sprawling sanctuary recognized for its natural beauty and commitment to environmental education. Through a company grant, students study desert ecology as part of an after-school program and enjoy guided tours while learning the value of protecting the environment in a safe, fun setting. It is our hope that some of these young people will someday be an integral part of our operational compliance, closure and rehabilitation programs.

Through our parent company, Rio Tinto, Resolution Copper partnered in 2004 with BirdLife International and jointly hosted a bird watching event at Boyce Thompson Arboretum in the spring of 2004 with Arizona Game & Fish, Boyce Thompson Arboretum and Wildlife Center at Adobe Mountain, a non-profit organization dedicated to the rehabilitation of Arizona wildlife. The event has led to productive partnerships that will become an integral part of our biodiversity strategy.

These events are about more than just watching birds. They're about protecting some of the world's most important and beautiful species and their habitats. Bird watches allow us to monitor local bird populations as a biodiversity indicator and help us better understand our impact on the environment.



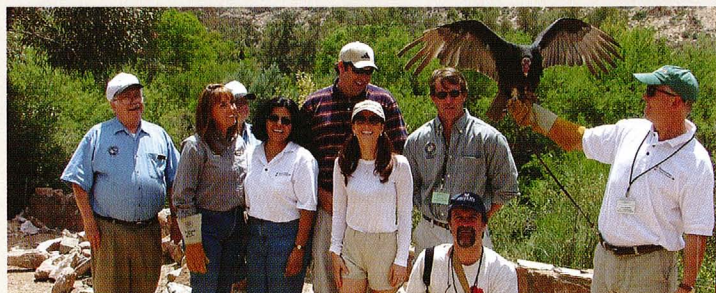
Chris Kline, education director at Boyce Arboretum, with local schoolchildren.



Student participants enjoy hands-on learning at the Arboretum.



McSpadden Ford and Resolution Copper joined forces to help secure a much-needed van for the Arboretum's after-school educational outreach programs.



Bruno Hegner, vice-president and general manager of Resolution Copper along with IMBD event staff, makes friends with a vulture.

BUILDING COMMUNITY RELATIONS

In 2003, Resolution Copper was introduced to Audubon Arizona through Rio Tinto partner BirdLife International. Since that time, the relationship with Audubon Arizona has prospered and become one of Resolution Copper's most beneficial partnerships.

Eco-tourism is an area of great economic promise for Superior, and Resolution Copper has pledged to help the community develop itself as a tourist destination. To help advance this effort, Resolution Copper collaborated with Audubon Arizona in 2003 to help designate the Boyce Thompson Arboretum in Superior as one of 27 Important Bird Areas (IBA) in Arizona. Full recognition as an IBA was granted to the arboretum in 2004. This means the arboretum will be a key site for promoting the IBA concept to the general public, and it will become a more prominent important bird and avian habitat education site.

For Resolution Copper, the initiative is twofold: First, it will help establish the region as a major destination for birding enthusiasts, scientists and researchers, resulting in a self-sustaining stream of eco-tourist dollars that will benefit the area economically. Second, it provides further incentive to ensure the area's environmental health and supports the company's mission of achieving environmental excellence at its operation. Resolution Copper is also a sponsor of Audubon Arizona's statewide initiatives, including the development of an Audubon Center, which provides nature education programs for school children.

In May 2004, representatives from Audubon Arizona, Tucson Audubon, Arizona Game and Fish and BirdLife International collaborated to celebrate International Migratory Bird Day at the arboretum. Superior residents have since met with the organization's Director of Development to explore opportunities for forming their own Audubon chapter. In late 2004, Bruno Hegner, Vice-President of Resolution Copper, was appointed to Audubon Arizona's capital committee. Jennifer Russo, corporate communications director, was also selected to serve on the organization's business advisory board.

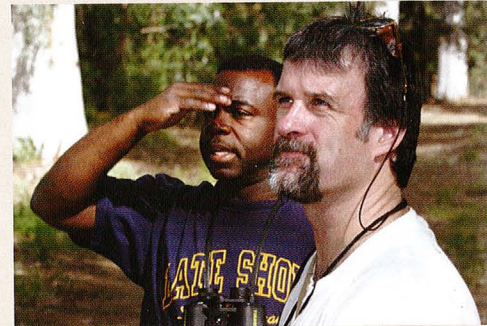
Resolution Copper and Audubon Arizona will continue to work together to expand the IBA program and carry out conservation efforts throughout Arizona. As the Resolution Project moves forward, Audubon Arizona will be an integral partner in determining the most appropriate ways Resolution Copper can contribute to similar efforts in the Resolution Project region. Audubon Arizona will also play a key role in formulating and executing Resolution Copper's biodiversity strategy.

Working with Audubon Arizona and other like-minded organizations allows Resolution Copper to develop a showcase 21st century mining operation that can seamlessly integrate with the community. Resolution Copper has committed to growing its partnership with Audubon Arizona in 2005 and to creating new ones with like-minded organizations that will help the communities develop in a sustainable way.

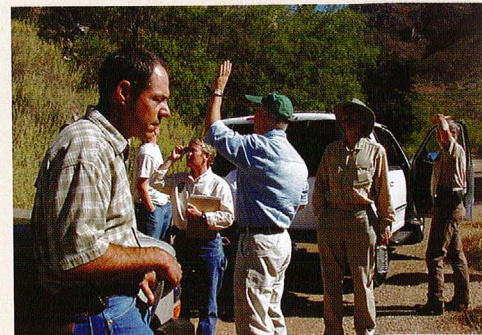
Bruno Hegner talks with Audubon Arizona staff at the International Migratory Bird Day event in May 2004.



Jonathon Stacey with BirdLife International and program participant at the event festivities in Queen Creek Canyon.



Resolution Copper, Audubon Arizona and Arizona Game and Fish staff discuss conservation management opportunities.



ENVIRONMENTAL INITIATIVES

In order to accept the challenge of environmental stewardship, we must understand the environmental aspects and potential impacts of our operations, build what we learn into systems to manage and minimize those impacts, and hold informed discussions on our activities with the community and other interested parties. Ultimately, we seek to prevent or otherwise minimize, mitigate and remediate the effects of our operations on the natural environment.

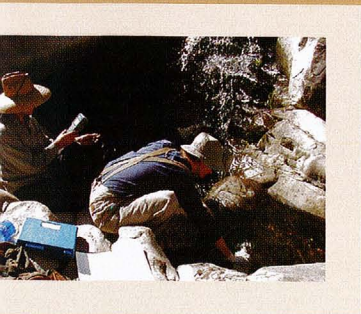
We have been conducting environmental investigations on the Resolution Study Site and in the surrounding area for about two years, collecting general background environmental data across a broad geographical area and for all environmental media, including air, land, water, plants and animals.

We have performed additional monitoring of washes and springs in areas surrounding the Resolution Study Site such as Devil's Canyon, Queen Creek, and Arnett Creek. We also installed several monitoring wells in order to collect data about groundwater in the area. These studies are ongoing.

Our company also recognizes the importance of riparian habitat for species diversity, water quality and recreation. The data we have collected allows us to build a regional groundwater model and help determine what impacts, if any, our operations may have on groundwater.

Wildlife studies on the Resolution Study Site include such activities as locating and identifying birds, monitoring ponds and pools for reptiles and amphibians, and recording information about sensitive species and their habitats.

The vegetation present on the Resolution Study Site has been carefully mapped, and the types of plants and where they occur on the Study Site have been recorded. In addition, all of the historic and prehistoric sites of the area have been thoroughly investigated and recorded.



Our company plans to continue environmental studies for several years during the feasibility study for the project and beyond if developing the mine is feasible.

Though the Resolution Project is still more than a decade from startup, we have undertaken several initiatives that are consistent with our company policies and support the long-term goals of the Town of Superior and our commitment to excellence in environmental performance. Many of our employees are active members of the community, and they, too, want to see the development of an environmentally responsible operation and join with us in making a lasting contribution.

Superior residents have indicated their wish to create a more aesthetically pleasing environment. In 2004, we began reclamation and cleanup of the West Plant site, which not only allows us to be proactive in managing potential environmental issues on-site, but also gives us an opportunity to support this important town initiative. Enhancements have included strengthening the water conveyance channels and impoundment spillways, upgrading the system's water treatment capabilities, and generally improving the capabilities of the entire system.

In December 2005, Resolution Copper will have an Environmental Management System (EMS) in place and will have the registrar audit scheduled. The ISO 14001 is the internationally recognized standard for Environmental Management Systems and is an integral part of the company's ability to manage its environmental impacts. Earning this high level of certification is further assurance that Resolution Copper is in conformance with the high standards set by its parent company Rio Tinto. The certification is voluntary and is done by an external certification authority.

We are further committed to efficient use of water and responsible water resource management. We will not only conserve water resources whenever possible, but will also maximize the use of non-traditional water sources. At this time, our company has devised short-term, medium-term, and long-term water-use/acquisition plans with the understanding that these plans may change to take advantage of new opportunities or solutions as they present themselves. Our company has already engaged with other Arizona water users in promoting the sustainable use of this vital resource.

PROJECT RECLAMATION

In the spring of 2004, we identified several open workings. The first phase of this initiative involved an extensive amount of fieldwork to locate open workings on both mining company's private land and nearby Forest Service land. The mine openings were then prioritized in terms of risk to public safety. A total of 17 openings were closed

using habitat-friendly grates. About half a dozen shallower adits were backfilled using PUF-Seal®, a lightweight, easily transportable polymer that is environmentally sound.

We have also placed over 100 warning signs on identified workings to alert the public to the dangers of the open holes. The closures were done in an environmentally responsible manner, allowing for the free movement of bats, snakes and other creatures while providing a safer outdoor experience for the general public. In early November, Resolution Copper initiated the second phase of its open workings closure program that involved the use of helicopters and a professional staff of more than a dozen people.

Resolution Copper is further realizing its pledge to environmental excellence through an extensive reclamation effort on the West Plant Site. Here, we will reclaim surface disturbances resulting from past mining operations. An additional \$4.5 million in voluntary remediation is scheduled for 2005.

Whenever possible, we hire local contractors and professionals to do the work that needs to be done. In 2004, Resolution Copper spent over \$1.5 million on cleanup and storm water management at its West Plant Site operations in Superior. The work was done entirely by local contractors and their crews, Dalmolin Excavating of Globe and Albo Guzman Trucking of Superior. The \$1.5 million was spread across fabrication, earthwork, concrete work, purchases of hardware and other equipment and payroll. Future work at Resolution Copper includes a \$20 million, five-year phased closure and rehabilitation of the West Plant Site.

(left) Before: Pre-construction view.
(right) After: Stabilization wall construction in lower 3-4 channel.



Bill Williams, vice-president, environment safety and health for Resolution Copper, discusses the company's plans for rehabilitating the West Plant Site at the Superior Chamber of Commerce.

2005 RCC ISO 14001 Objectives and Targets

RCC Strategic Objective: Resource Stewardship

EMS Objective - Manage water according to good practice

2005 RCC HSE Objectives and Targets:

RCC Strategic Objective: Pollution Prevention

RCC Objective - Monitor potential greenhouse gas production

RCC Objective - Assure permit compliance

RCC Objective - Conduct follow-up/close-out to compliance audits

RCC Strategic Objective: Maintain Environmental performance

RCC Target: Maintain permit compliance

RCC Target: Maintain regulatory compliance

HEALTH, SAFETY AND ENVIRONMENTAL POLICY

Openness and transparency are important elements of health, safety and environmental success. Resolution Copper will continue to communicate its progress toward its goal with all stakeholders.



Fundamental to our long-term business success is strict adherence to a health, safety and environmental (HSE) policy that assumes all injuries, occupational illnesses and environmental incidents are preventable. Our goal is zero injuries.

Each system is established to promote safe workplaces and reduce or control the likelihood of pollution. Accordingly, work procedures for fundamental tasks are clearly defined and adhered to. Every employee receives training on essential HSE issues related to their work and we set targets to achieve our HSE goals in every area of our business. We maintain a high expectation of continuous improvement.

Openness and transparency are important elements of our health, safety and environmental success. We will always communicate our progress to our stakeholders.

Resolution Copper formally tracks all work-related incidents in accordance with the guidelines set by our parent company, Rio Tinto. In 2004, we recorded a Lost Time Injury Frequency Rate (LTIFR) of 2.96 (based on 200,000 hours worked). The hours worked reflect both employee and contractor hours.

We will continue to work toward improvement in safety performance by continually offering practical, hands-on training for employees and contractors. All Resolution Copper employees also receive MSHA training and are required to renew their certification regularly. Additional areas of focus include vehicle and driving safety, machinery operations, first aid and general workplace safety. Our company believes safety doesn't end when a shift ends. A future area of concentration will be on increased employee safety awareness off the job. Employee seminars will feature tips, ideas and techniques to improve safety both on and off the job. We are committed to attaining our goal of zero injuries.

POLICY LAND USE ISSUES

Resolution Copper and its predecessors currently own private land in the immediate and surrounding areas of the proposed mine development. In addition, the company has filed and maintained numerous unpatented mining claims above the potential mine dating back to 1917.

Before reaching a decision on whether to develop these mining claims and construct the mine, Resolution Copper must invest more than \$200 million in additional exploration activities. To justify making an investment of this magnitude, Resolution Copper needs access consistent with industrial development of the surface lands above the potential mine.

The surface lands are crucial to the development and operation of the safest possible mine. The proposed underground mining activities on our private land and mining claims could conflict with recreational uses of the surface lands. Resolution Copper will only develop the mine if it can be done in such a manner that potential conflicts are minimized and safety is maximized.

At this time, Resolution Copper is examining several options related to land use and development of the safest mine possible. We are diligently working now with town officials and community groups to identify the best ways to support this effort. By engaging in ongoing dialogue with our stakeholders, we are confident we will find an environmentally sustainable solution that will result in the long-term health and viability of the area's natural resources.

RCC Strategic Objective: HSE Performance

RCC Objective - Improve safety performance

RCC Target: Maintain RCC fatal accident at 0

RCC Target: Reduce RCC Lost work day case experience to 0

RCC Target: Reduce RCC all injury experience to 0

RCC Target: Maintain RCC occupational disease/illness cases to 0

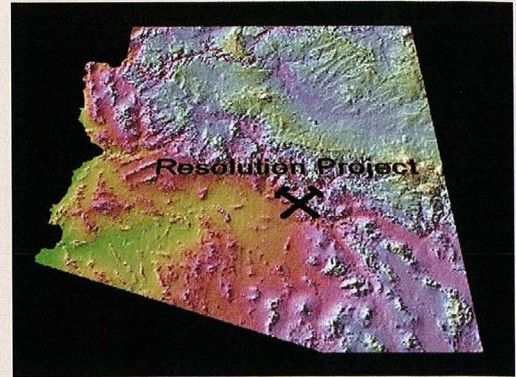
RCC Strategic Objective: Health Safety & Environmental Systems

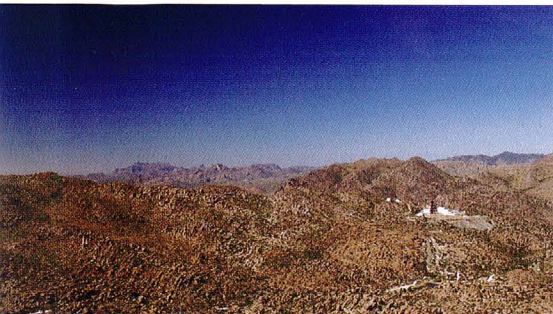
RCC Objective - Improve safety performance supported by development of an operations safety system based on ISO principles and concepts.

With at least a decade of feasibility and engineering studies before us, Resolution Copper is laying the necessary groundwork to build an efficient and productive mine that is technologically sophisticated, safe, environmentally sensitive and developed according to community values and objectives. By instituting an integrated series of social, economic and environmental initiatives, the project seeks to benefit the region and the state of Arizona while creating sustained development that will last well beyond the mine's closure.

We will continue to actively engage residents, community leaders and partners using outreach programs, social surveys, and community investments to advance our mutual goals. Through our community committees, open house meetings, newsletters, media tours and presentations, we will seek an ongoing dialogue with our extensive network of stakeholders. And we will continue to find solutions for developing the mine safely, with the least environmental impact and the greatest economic benefit.

Resolution Copper is committed to changing the adverse way mining affects the regions in which it operates. We have long recognized that the boom-and-bust "Company Town" paradigm is a relic of the past. The long-term health of both the company and the community are inextricably tied together, and the work we do must be in service to them both. Only by continuing to treat each social, economic and environmental component as part of an integrated whole will we achieve our full potential and realize the vision of The Mine of the 21st Century.





SUSTAINING OUR FUTURE

Sustainable Development is

Development which meets the needs of the present generation without undermining the capacity of future generations to meet their needs.
1987 Brundtland Commission



Sustaining our communities past, present and future generations 1993-2003



Wheat and eye glasses count restored areas of the South Valley landscape



Trailings from the Historic Park Mine were part of Resolution's cleanup efforts



Safety is everyone's responsibility



Social Well-Being

Community Development
Employee Health & Safety
Employee Training
Employee Welfare
Employee Relations
Employee Compensation
Employee Benefits
Employee Security
Employee Development
Employee Education
Employee Research
Employee Innovation
Employee Creativity
Employee Imagination
Employee Inspiration
Employee Motivation
Employee Commitment
Employee Loyalty
Employee Dedication
Employee Passion
Employee Enthusiasm
Employee Energy
Employee Spirit
Employee Soul
Employee Heart
Employee Mind
Employee Body
Employee Soul
Employee Heart
Employee Mind
Employee Body

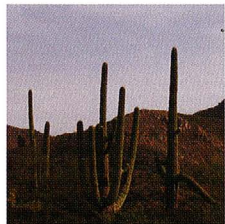
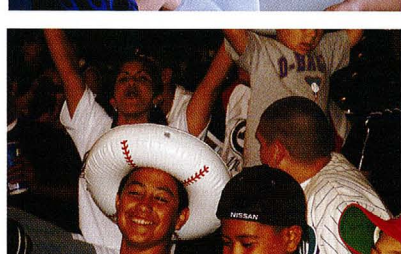


Economic Prosperity

Community Development
Employee Health & Safety
Employee Training
Employee Welfare
Employee Relations
Employee Compensation
Employee Benefits
Employee Security
Employee Development
Employee Education
Employee Research
Employee Innovation
Employee Creativity
Employee Imagination
Employee Inspiration
Employee Motivation
Employee Commitment
Employee Loyalty
Employee Dedication
Employee Passion
Employee Enthusiasm
Employee Energy
Employee Spirit
Employee Soul
Employee Heart
Employee Mind
Employee Body
Employee Soul
Employee Heart
Employee Mind
Employee Body

"Mining, minerals and metals are important to the economic and social development of many countries. Minerals are essential for modern living." (Emphasis added.)

Johannesburg Declaration, World Summit on Sustainable Development 2002



Resolution Copper welcomes feedback from all of its stakeholders on this report and all mutually relevant issues. Please send your comments to info@resolutioncopper.com or contact Jennifer Russo at 602.956.0223, ext. 15.



Resolution Copper Company

www.resolutioncopper.com
email: info@resolutioncopper.com



During this past year, Resolution Copper has established enduring relationships with our Superior neighbors built upon mutual respect, active partnership, and long-term commitment. We have focused much of our efforts in 2004 on how Resolution Copper can make a difference in Superior in a sustainable way. This has included exploring options for regional development, support of job training and education initiatives and support of community based projects.

Please accept my appreciation to each of you for your continued support of the Resolution Project. We also want to recognize and thank the communities of Globe and Miami, and others that have expressed an interest in our business. We look forward to growing and working together in the New Year.

Thank you for reading along and have a happy and safe Holiday Season.

Bruno Hegner

Bruno Hegner
Vice President-General Manager

Resolution Copper Hosts Economic Development Forum in Superior

More than 120 people attended an economic development forum hosted by Resolution Copper on Tuesday, October 19 in the Town of Superior. The forum's attendees, including Superior business owners, community leaders and elected officials received an overview of the Town of Superior's General Plan, an update on the Resolution Project, and an economic development opportunities presentation provided by the Arizona Department of Commerce. These opportunities included job training grants, enterprise zone opportunities, planning grants, road construction, low-interest home loans, environmental cleanup grants and private activity bonds.

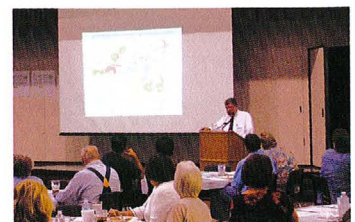
Mayor Michael Hing provided the opening remarks, followed by Brent Brown, rural affairs policy advisor for Governor Janet Napolitano, who brought special greetings from the Governor's office. Roy Chavez, town manager, provided an overview of the Town of Superior's General Plan and touched upon many key issues including the nature and location of future development. Speakers from the Arizona Department of Commerce included Joe Yuhas, deputy director; Tom Belshe, assistant deputy director; and Darcy Renfro, assistant deputy director. Participants reviewed informative displays and received handouts that offered further explanation of several Arizona Department of Commerce initiatives.



Joe Yuhas, deputy director for the Arizona Department of Commerce, talked about the many services available through the Department. Superior Mayor Michael Hing (podium) served as moderator for the forum.

"This was an opportunity to explore options for community development and economic growth," said Bruno Hegner, vice president of Resolution Copper Company. "Collaboration among private companies, government organizations and town leaders can drive economic development and help Superior realize its goals for development."

"Our job at the Arizona Department of Commerce is keeping, growing and attracting good jobs across the state," said Deputy Director



Roy Chavez, town manager for Superior, presented Superior's General Plan and described the Town's blueprint for its future.

Joe Yuhas. "Partnership of this sort is critical to long-term success for businesses and communities to improve the lot of all Arizonans.



(Right) CVIT culinary students took responsibility for serving and cleanup.

All of the evening's participants agreed that fostering a strong local community would be critical to the Town's success. Going forward, the citizens of Superior, key elected officials, Arizona Department of Commerce, Resolution Copper and other interested parties will focus on matters affecting development and future competitiveness of the area, and will expand upon the vision and goals outlined in the Town's General Plan.

Resolution Copper would like to offer special thanks to Superior Junior/Senior High School for use of their facilities, Los Hermanos Restaurant, Felicia's Ice Cream Shop, and the Cobre Valley Institute of Technology culinary students for their assistance with service and cleanup.



Nearly 100 guests, including State Senator Pete Rios, took part in the Superior Economic Development Forum hosted by Resolution Copper.

Resolution Copper Newest Partner at Gila County Educator Conference

More than 900 educators from Gila County took part in the Gila County Educator Conference held October 1 at High Desert Middle School in Globe. The conference, featuring 46 presenters and 50

breakout sessions, offered participants an opportunity to earn six professional development hours.

Gila County Superintendent Armida Bitner provided the opening remarks. Conference highlights included the singing of the national anthem by Tonto Basin Elementary students, catering by San Carlos High School culinary arts students, and lunchtime entertainment courtesy of the Miami High School band. "The conference was bigger and better than ever before," said Bitner.

Participants gained knowledge and skills that will immediately benefit Gila County's school children. Resolution Copper sponsored the printing of the symposium book. The company was pleased to support this professional growth seminar and looks forward to building upon its partnership with Gila County schools.



From left: Margo Bracamonte, Gila County Educational Service Agency, Jennifer Russo, Resolution Copper, and Armida Bitner, Gila County Superintendent, at the opening ceremony of the Gila County Educator Conference.

Resolution Copper Joins Superior Optimist Club as Charter Member

Resolution Copper is delighted to be a charter member of the newly formed Superior Optimist Club. The chapter is part of Optimist International, a 114,000-member organization dedicated to meeting the needs of young people in communities worldwide. The Optimist Club is not only devoted to helping bring out the best in kids, but is also committed to developing optimism as a philosophy of life.

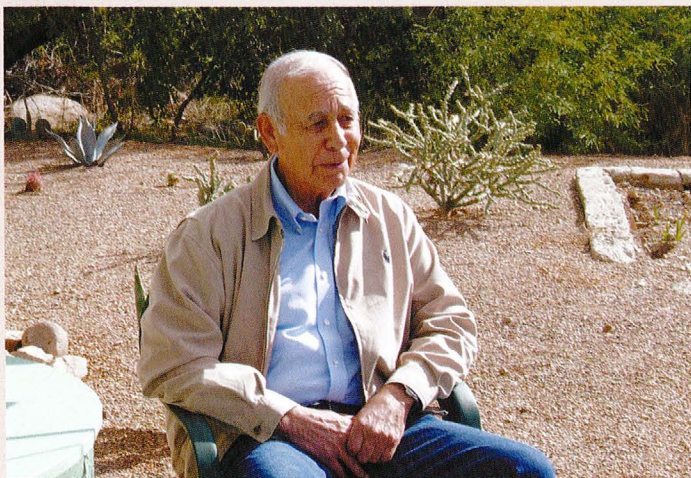
As a charter member of the Club, Resolution Copper is supporting development of the chapter and is assisting in the development and execution of important initiatives. Other charter members include

Ampy Gomez, Mira Lira, Roy Chavez, Olga Lopez, JoAnn Besich, Billy and Chella Preciado, Rick Hettler, Cindy Benson, Maxine Leather, Yvonne and Jack Kube, as well as Superior Head Start, Superior Police Department and Superior Boy Scouts. The Superior Optimist Club has identified several positive service projects they would like to champion, including literacy outreach.

The Superior Optimist Club meets the first and third Mondays of the month at 7 p.m. For more information about membership opportunities, contact Mila Lira or Yvonne Kube at 520.689.5004.

Resolution Copper Begins Living History Program

As part of its commitment to recognizing and preserving the rich mining history of the Superior area, Resolution Copper has completed the first phase of its life histories program, which included videotaping the life stories of former copper miners and their family members, as well as citizens that were raised and worked in Superior, Globe and Miami. Eighteen people from Superior, Globe and Miami took part in the interview process. Participants shared information about their personal experiences, work and hopes for the future of their community. Many interviewees told colorful stories of their past, while others brought photographs and memorabilia. The interviews were conducted at the Bullion Plaza Culture Center and Museum in Miami and at Café Piedra Roja in Superior in early November.



Superior resident Manny Ruiz shared personal experiences and offered his thoughts on future opportunities for the Town and the mining company.

The living history program is an opportunity to capture on film stories of the social and cultural history of these communities and learn from the experience of the many men and women who worked for the mining companies. Resolution Copper will provide the completed video history to schools, museums and historical societies and will present it at a mining conference sometime next year. The completed project will serve to recognize the visionaries who helped to create the area's history and preserve the unique stories of the communities.

In addition to the personal interviews, Resolution Copper is working in collaboration with local artist Burdell Moody. He is using his creative flair to capture the area's history and is highlighting the role that copper mining played in its development.

Resolution Copper would like to offer a special thanks to Superior's Mayor Michael Hing, Town Council Member Lynn Heglie, and Bob Raveles with the Bullion Plaza Culture Center and Museum in Miami for helping to identify program participants and for the use of their facilities for conducting the interviews.



Friends reunited at the Bullion Plaza Museum where Resolution Copper conducted personal interviews for its Living History program.

Resolution Copper Continues Cleanup Efforts, Kicks Off Open Workings Closure Program

In 2004, Resolution Copper instituted a vigorous work program dedicated to improving both the environmental conditions and aesthetics of the former milling and smelting site in Superior. Initiatives included: improving water conveyance efficiency, strengthening weak points in the system and improving the overall treatment capabilities of the system. In 2005, the company will follow an aggressive work program with a focus on relocating sediment sources, rerouting clean water flows and removing some of the unsound historic structures. The initiative is part of a five-year, \$20+ million effort focused on closure of the West Plant Site. Full closure will be attained when the property is restored to a safe, stable, self-sustaining and rehabilitated state. The company will spend significant time evaluating all opportunities and post-mining uses. In addition, Resolution Copper is actively

seeking community input on the preservation of several historic and smelter structures, as well as feedback on site redevelopment.



In early November, Resolution Copper initiated the second phase of its open workings closure program that involved the use of helicopters and a professional staff of more than a dozen people.

Southwest Helicopters will transport supplies and other materials used in the construction of habitat-friendly grates. The choppers can transport items weighing over one ton.

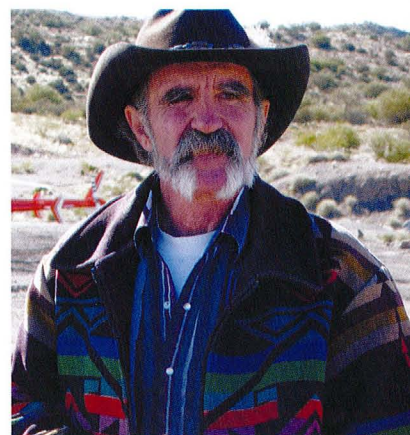
The first phase of this initiative involved an extensive amount of field-work to locate open workings on both the mining company's private land and nearby Forest Service land. The mine openings were then prioritized in terms of risk to public safety.



Within minutes after mixing two liquid reagents, the PUF-Seal® hardens and quickly expands to fill the opening.

After a brief training and safety induction, the first helicopters launched in the early morning on November 2. The helicopters are key in transporting equipment and materials used in constructing grates that will seal 17 of the openings. Darling Surveying is the primary consultant on the mine closure project and is responsible for installation of the bat-friendly grates. It will take a crew of 13 up to

six weeks to secure the abandoned mine sites. A campsite near Belmont Mine will be their temporary home. Tony Martinez with Resolution Copper is serving as project manager with responsibility for daily operations and project safety.



Wild Bill McClain will be serving up tasty meals for the Darling crew at their campsite near the Belmont mine over the next several weeks.

In addition to the habitat-friendly grates, Resolution Copper is using PUF-Seal®, a lightweight, easily transportable polymer that is environmentally sound. About half a dozen shallower adits will be back-filled using this material. Darling Surveying is also overseeing this phase of the project.

Resolution Copper has placed over 100 warning signs on identified workings alerting the public to the dangers of the open holes. The company will post additional signage in the coming months.

Earlier this year, Resolution Copper began work aimed at becoming an ISO14001 Registered company in December of 2005. The ISO14001 is the internationally recognized standard for environmental management, and it will become an integral part of the company's drive for superior



Resolution Copper spent over \$1 million in 2004 on storm water improvements.

environmental performance. Earning this high level of certification is another example of Resolution Copper's and Rio Tinto's commitment to environmental excellence. An independent external third-party registration authority reauthorizes this voluntary certification every six months.

Resolution Copper Commits to Keeping Safety on Track

When Resolution Copper asked members of the community to identify the most important issues related to the development of a new mine, safety was listed as a major priority. At Resolution Copper, safety is not only a priority, but is also a core value. Both Resolution Copper and Rio Tinto believe that all injuries, occupational illnesses and environmental incidents are preventable. Our goal is zero incidents.

Resolution Copper is building a supportive safety culture that includes ongoing education and training. The commitment and involvement of all employees to safety is paramount, and each person who works at Resolution Copper is responsible for his safety and that of his fellow workers.

Everyone at Resolution Copper is involved in spreading safe work habits and practices to ensure the company maintains an exceptional safety record. To keep safety at the forefront, Resolution Copper employees follow the words of the acronym, TRACK:

To Keep Safety on TRACK, before every job STOP and

- Think through the Task
- Recognize the Hazards
- Assess the Risks
- Control the Hazards
- Keep Safety First in All Tasks

Are you fit for duty?

- Am I committed to working safely?
- Am I alert and rested?
- Am I focused on the job at hand?

To ensure you work safely, carry out these checks and questions BEFORE you start:

Think through the Task

- Think about each step in the task(s)

- Permits and authorizations needed to work
- Equipment and tools that are to be used
- Area personnel that need to be notified

Recognize the Hazards

- Check that your work area is safe
- Check that your equipment and tools are safe
- Check that energies and substances are isolated
- Check above and below for potential hazards

Assess the Risks

- Could an injury or accident be avoided?
- What equipment/systems could be damaged?
- What are the likelihood and consequences?

Control the Hazards

- Eliminate (remove the hazard)
- Substitute (less hazardous materials)
- Engineering (guards, covers, handrails)
- Administration (JSAs, SOPs, permits, signage)
- Correct PPE (harness, glasses, gloves)

Keep Safety First in All Tasks

- Check for changes in work conditions (i.e., wind)
- Monitor safety controls for effectiveness
- If the Task changes, reassess Safety
- Continually reassess work progress
- Look after yourself and others



Openness and transparency are an important element of health, safety and environmental success. Resolution Copper will continue to communicate its progress toward its goals with all stakeholders.

102 Magma Heights
Superior, AZ 85273

Superior High School Football Champions Celebrate 50-Year Reunion



Dave Lira and his wife, Verna, join in the celebration.

More than 90 players, spouses and friends from Superior High School's 1954 Class B State Football Championship team reunited at the VFW in Superior on October 1 to celebrate their 50-year team reunion.

Participants enjoyed dinner, plaques, memory books and complimentary tickets to watch Superior play Thatcher. Resolution Copper was honored to have an opportunity to sponsor this wonderful get-together.



Friends from Superior High School's 1954 Class B State Championship reunite at the VFW in Superior.

Fast Facts

In 2003, the State of Arizona's copper industry's combined direct and indirect impact on its economy was \$2.7 billion. The industry's total impact on the United States economy was over \$11 billion.

About 18,000 direct and indirect jobs were attributed to the copper industry in 2003.

It is estimated that each American uses 23.5 tons of newly mined minerals each year.



(Left) Bruno Hegner, vice president and general manager, addresses the Globe-Miami Chapter of People for the West.



(Right) Bill Williams, vice president, environment safety and health for Resolution Copper, discusses the company's plans for rehabilitating the West Plant Site at the Superior Chamber of Commerce meeting in October.

WHAT'S INSIDE

- **RESOLUTION COPPER SPONSORS INTERNATIONAL MIGRATORY BIRD DAY**
- **NEW SUMMER INTERNS**
- **A NIGHT AT THE BALLPARK**



Since the transition to manager of the Resolution project, our staff has certainly been busy. The most visible activity has been the reclamation efforts on the West Plant Site. We are excited about the major improvements that have taken place in the past 45 days and look forward to sharing our progress with you as we move forward.

Resolution Copper continues to be actively involved in community outreach. In May we hosted a special event to commemorate our transition to manager of the project, sponsored a bird watch at Boyce Thompson Arboretum and enjoyed a fun-filled night at Bank One Ballpark with students from Superior Junior/Senior High School.

We are eager to work with town leaders to ensure that our strategy complements Superior's General Plan and look forward to becoming part of its diversified economic structure by supporting eco-tourism, recreation and new business opportunities. We also continue to work closely with our community committee and local officials.

I want to thank the Town of Superior for their continued support. We look forward to working together to build a better community.

Bruno Hegner
Vice President-General Manager

RESOLUTION COPPER REACHES KEY MILESTONE

On May 1, 2004, Resolution Copper transitioned to manager of the Resolution project. To celebrate this milestone, Resolution Copper hosted a special community event – an ice cream social – with food and entertainment. There was also a ribbon-cutting ceremony at the company's Superior headquarters to mark the transition. Resolution Copper was delighted to have so many community leaders and residents join them in commemorating the special occasion.



Sipie and his Big Band Sound kept the crowd on their feet.

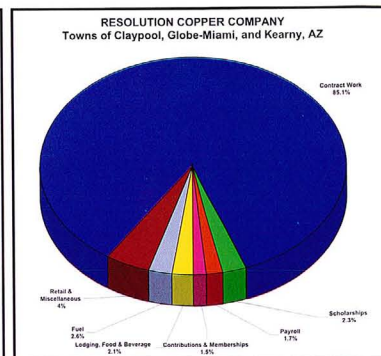
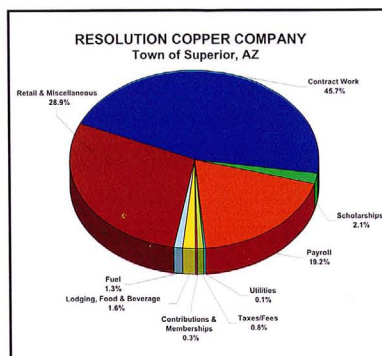


Company personnel and local officials take part in the ribbon cutting.

RESOLUTION COPPER COMMITS TO SUPPORTING ITS HOST COMMUNITIES

Resolution Copper is committed to giving back to its host communities. Though the project is in the early stages of evaluation, it is gratifying to know that the company's presence is already having a positive impact in Superior and surrounding communities. Resolution Copper is also pleased to be supporting priorities the community has identified such as education, youth activities and beautification of the Town of Superior. The following charts show the company's economic impact, which will grow as the project progresses.

Resolution Copper has invested over \$550,000 to date in Superior and surrounding communities. The charts below show the allocation of those funds:



*Economic contributions as of 7/31/04

See Community Outreach story on page 3.

RESOLUTION COPPER SPONSORS INTERNATIONAL MIGRATORY BIRD DAY CELEBRATION

On May 8, 2004, more than 50 bird enthusiasts joined Resolution Copper, Arizona Game and Fish Department, Arizona Bird Conservation Initiative, Audubon Arizona, Boyce Thompson Arboretum and Partners in Flight to celebrate International Migratory Bird Day. Participants enjoyed a guided bird walk through the Arboretum grounds, an avian photography class and Noon Bird Field Guides 101. Over 30 species of birds were identified. Visitors also had a chance to see a hawk, peregrine falcon, burrowing owl and other native birds from the Arizona Game and Fish Department's Wildlife Center at Adobe Mountain. Event posters and calendars were sold with all proceeds benefiting the Wildlife Center. The event was an exciting day for the whole family to get out and enjoy nature. It was also a wonderful opportunity for Resolution Copper to learn more about the important avian habitat in and around its operations.

Since the event, Resolution Copper is working with the Arizona Game and Fish Department, Audubon Arizona and other experts to discuss opportunities to enhance the ecological values of the mining company's private lands. Resolution Copper looks forward to next year's celebration and to working together with these very important partners.



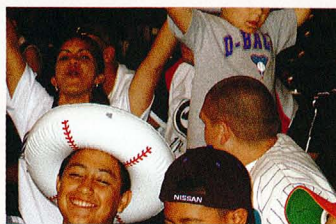
Bruno Hegner, vice president and general manager of Resolution Copper, along with IMBD event staff, makes friends with a vulture.



Participants learn the "how to" in avian photography.

RESOLUTION COPPER, SUPERIOR STUDENTS ENJOY A NIGHT AT THE BALLPARK

On Friday, May 7, more than 50 students and staff from Superior Junior/Senior High School enjoyed a great night at Bank One Ballpark courtesy of Resolution Copper. Students and faculty from the school and Resolution Copper Company personnel watched the Arizona Diamondbacks take on the Montreal Expos. The tickets, donated by Resolution Copper, were given to academic achievers, student athletes, little leaguers and other top performers on and off the field. Though the Diamondbacks were defeated, the night out was a home run for everyone who attended.



Take me out to the ballgame: Superior students and Resolution Copper personnel at the Bank One Ballpark.



RECLAMATION WORK UNDERWAY AT WEST PLANT SITE

As project manager, Resolution Copper has begun work on an extensive rehabilitation project on the West Plant Site. The hard work of company personnel and local contractors is showing tangible results.

The current restoration plan not only allows the company to be proactive in managing potential environmental issues on the West Plant Site, but also gives Resolution Copper an opportunity to support the town's revitalization efforts and enhance its aesthetic beauty. Enhancements include strengthening the water conveyance channels and impoundment spillways, upgrading the system's water treatment capabilities and generally improving the water-carrying capabilities of the entire system in the event of an unusually large storm.

Albo Guzman, Dalmolin Excavating and their crews are local contractors that have been and will continue to be an integral part of the reclamation efforts and long-term cleanup.

In the fall, Resolution Copper will begin work on its second initiative that involves closing open workings that remain from previous mining operations. This will be done in an environmentally responsible manner, allowing for the free movement of bats, snakes and other creatures, while providing a safer site.



Pre-construction view.



Stabilization wall construction in lower 3-4 channel.

STUDENTS JOIN RESOLUTION COPPER AS PAID SUMMER INTERNS

Superior Junior/Senior High School graduates Erica Diaz-Gonzalez and Erin Jackson, along with Globe High School graduate Jeff Parker and Florence High School alumnus Henry Ulloa, have spent the past two months working as paid interns participating in the company's inaugural Summer Internship Program.

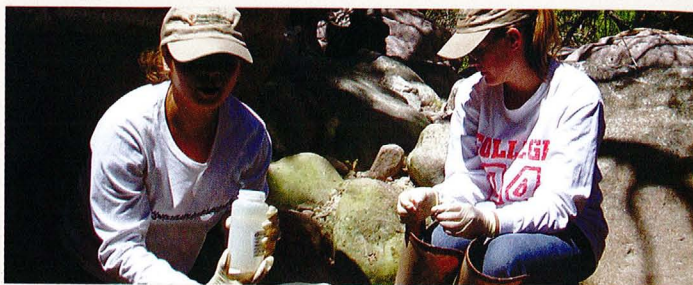
Since safety is a core value and top priority for Resolution Copper, the program kicked off with an orientation and safety training where the students earned their MHSA certification. The interns have been engaged in a vigorous work plan that has included a variety of field work and database management. They have spent time with staff geologists collecting water quality samples, conducting field mapping, working on a magnetometer survey and collecting valuable data. They recently spent a week at Audubon Appleton-Whittell Research Ranch helping to rebuild a wildlife friendly fence.

The students have learned how to operate complex field and computer equipment, offering them hands-on experience and the chance to be better prepared when they transition to the workplace. The company is delighted to have the students participating in this unique program and hopes to offer similar opportunities every summer. Program participant Erica Diaz-Gonzalez said it best: "Through this internship with Resolution Copper, I feel I have developed a better knowledge of what my career as a biologist may consist of. I have learned many valuable occupational skills that will be of great value to me as I work toward the completion of my degree."

Gonzalez and Jackson were the 2003 winners of the Resolution Copper Scholarship. Both recipients are studying at Arizona State University, with Erica working toward a career as a conservation biologist and Erin studying nursing. Jeff Parker will be a junior at Northern Arizona University where he is planning to dual major in mechanical engineering and business. Henry Ulloa just completed his spring semester at Wabash University in Indiana and is contemplating a career in law enforcement.



Globe resident Jeff Parker checks water samples as part of his duties participating in the Resolution Copper Summer Internship program.



Superior residents Erica Diaz-Gonzalez and Erin Jackson hard at work in the field.

RESOLUTION COPPER COMPLETES COMPREHENSIVE, LOCAL ASSESSMENT; CONTINUES COMMUNITY OUTREACH EFFORTS

Resolution Copper recognizes that building strong communities and helping them achieve long-term goals takes time. The first step in this process is to understand the needs, challenges and goals of the company's host communities. Resolution Copper recently surveyed local leaders, community committee members, as well as 225 students attending Superior Public Schools. The results identified several key areas in which Resolution Copper can play an important role in enhancing the social and economic vitality of the community.

Resolution Copper is proud to be supporting community-based organizations. Some of the company's recent contributions include the Apache Leap Mountain Festival, Superior Chamber of Commerce, Superior Boy Scouts and Superior Little League. The company also awarded four new grants valued at \$6,000 each to students pursuing a higher education, and renewed scholarships for several previous Resolution Copper Scholarship Program award recipients from Superior and surrounding towns. Resolution Copper will also continue to work with partners who share its mission and will help with its execution. The company is especially proud of the partnerships that have grown and strengthened, including its relationship with Boyce Thompson Arboretum.

Direct engagement with key stakeholders, coupled with the feedback obtained from the student surveys and community assessments, allows Resolution Copper to develop programs to help build stronger communities. The company thanks the many community leaders and local citizens without whose continued support and cooperation this work would not be possible. For a complete copy of the student survey results, please visit www.resolutioncopper.com/community/survey.





102 Magma Heights
Superior, AZ 85273

FAST FACTS

Resolution Copper anticipates employing nearly 1,000 people during construction and about 400 high-quality, permanent positions.

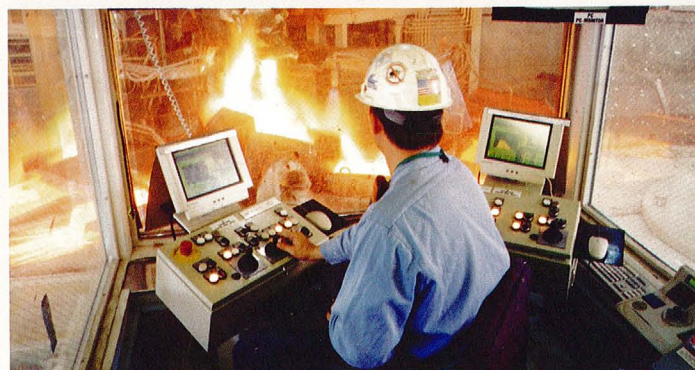
Resolution will create about 1,500 service-related positions.

Resolution Copper employees will average over \$60,000 in annual wages and benefits.

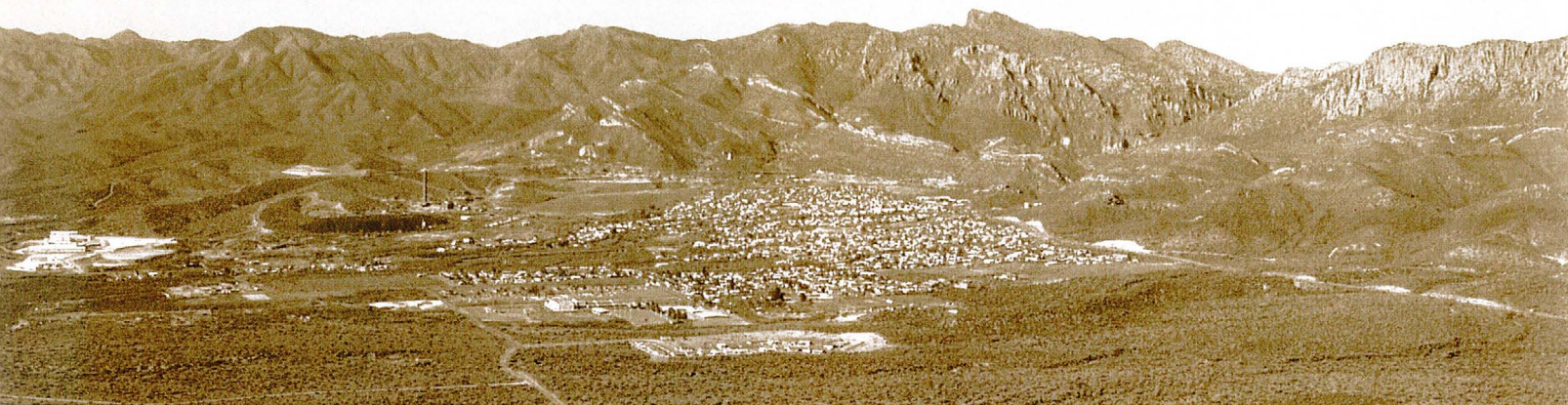
Resolution Copper plans to invest nearly 2 billion dollars to develop the mine.

Resolution may be the largest copper deposit in North America and will have a significant, positive impact on current copper deficits.

Resolution Copper will develop an underground mine with no open pit.



Project Profile



Resolution Copper Mining

The Resolution Project

Overview

The Resolution Project is located approximately three miles east of Superior, Arizona in the historic Pioneer Mining District. Initial exploration, conducted from 2001 to 2003, indicates what could be the largest ore body ever found in North America, capable of producing 20 percent of expected future US copper demand over five decades. The ore body rests more than a mile below the surface. In May 2008, Rio Tinto, Resolution Copper's parent company, announced that Resolution Copper had completed sufficient drilling on the deposit to report an inferred resource* of 1.34 billion tons, containing 1.51 percent copper and 0.040 percent molybdenum.

Determining the most feasible means of mining the ore body at this depth is one element of fact-finding and investigative fieldwork the company is now pursuing as part of its pre-feasibility studies. Technical challenges include a mining depth of 7,000 feet and a temperature of 185 degrees Fahrenheit.

Long-Term Impact

The Resolution Project will have a projected annual impact of \$798.2 million, the economic equivalent of one and a half National Football League Super Bowls per year, for 66 years.



The Resolution Project

Additional pre-feasibility work is focused on evaluating a broad range of mining, processing and operating alternatives; studying water, transportation and infrastructure needs; and sinking an exploratory shaft. Pre-feasibility studies are expected to conclude in 2012, with first production by 2020. The anticipated production is 500,000 tons of copper metal per year.

*An inferred resource assumes there is a continuous mineralized body present, based on geological evidence, however, the actual mass of the mineralization is still unproven.

Economic Benefits

Total economic impact of the 66-year project on the state of Arizona is estimated to be \$46.4 billion. During the peak years of mine production, annual impact of the mine itself is estimated to be \$536.6 million. If the additional development of residential, commercial and industrial land is

considered, peak annual economic impact on the state is projected to be \$798.2 million, the economic equivalent of one and a half NFL Super Bowls per year, every year for 66 years.

In terms of fiscal impact, the project is estimated to generate total federal, state, county and local tax revenue in excess of \$10.7 billion.

Equally important are projected employment figures. Over the 66 years of mine life, an on-site peak of 1,200 mine employees and 200 construction workers are anticipated during normal operations. Including indirect and induced jobs, annual mine operations are initially expected to account for 2,603 total jobs with \$178.7 million in wages.*

*Fiscal and economic figures are based on a third-party report commissioned by Resolution Copper and conducted by Elliott D. Pollack & Company.

Our Commitment to the Community

Good relations with the communities we operate in are fundamental to our success as a company. Our approach is to work with the Town of Superior and the surrounding area to support the community's vision for economic development and social stability. Our goal is to help with specific activities that jumpstart economic



John F. Kennedy Elementary School fifth-grade students visited the Arizona Mining and Minerals Museum

resurgence and, over the long term, to act as a partner in maintaining the area's sustainability. To further this goal, Resolution Copper has joined with the Arizona Department of Commerce to help Copper Triangle communities diversify their economies.

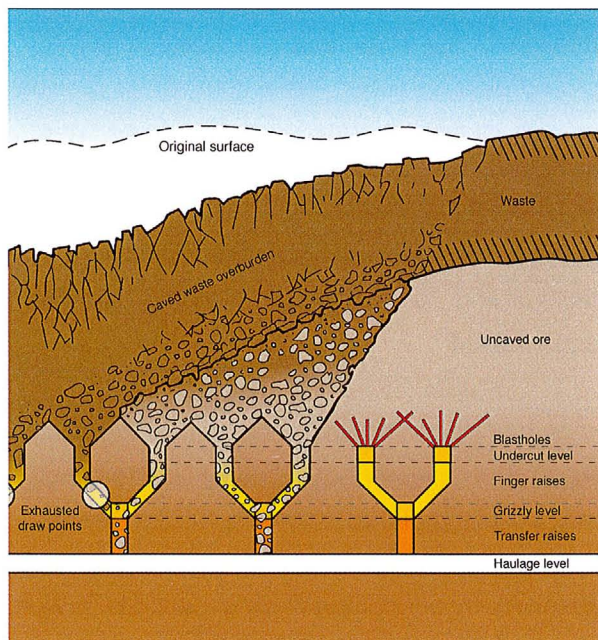
Resolution Copper's commitment to keeping the public informed is central to our operation. We routinely host town hall-style meetings, open houses, and have a Mine Information office on Main Street in downtown Superior. In addition, we've organized community advisory committees throughout the region that we routinely brief on project developments. These committees provide us with valuable information on how to be better neighbors. Resolution Copper has also made philanthropic contributions in the region and has partnered with environmental, educational, regional and state organizations to stay informed and involved.

Our Commitment to the Environment

Resolution Copper has voluntarily undertaken a major cleanup of the Superior-area site effected by previous mining operations. Reclamation costs absorbed by our company will exceed \$50 million, and the majority of work is being completed by local contractors, thereby supporting the local economy. Our reclamation objectives are to protect the health of both the citizens and the environment from any legacy mining residue that may exist, restore the site with natural vegetation and a sustainable cover, and re-establish the area for useful purpose.

Mining Method

We recognize that by its nature, mining disturbs the land. We're fully committed to minimizing negative impacts and sustaining the environment at every stage of mine development and operation. To that end, we are now planning for the closure of our mine before we begin construction. We will have a course of action in place to return the land to its natural state and help local communities develop sustainable economies once our operations cease.



Block Caving Mining Method

Our underground mining method uses state-of-the-art technology and block caving techniques to preclude the need for open pits and limit waste rock piles. Block caving is an economical, efficient mining approach that uses gravity to extract ore. Below the ore body, a series of tunnels is built to ensure that the ore will fall by gravity to the bottom of the cave into a series of collection points. Loaders then collect the ore and transport it to an underground crusher. Shafts are used to raise the crushed ore to the surface for processing.

The Land Exchange

Resolution Copper and its predecessors own private land in the immediate and surrounding area of the proposed mine development. The company has also maintained several unpatented mining claims above the potential mine dating back to 1917. Additionally, access is needed to forest land in and around the Oak Flat area where mining is currently prohibited by federal law. This is necessary to complete our feasibility study and to make a final decision regarding how to develop the mine. Passage of the *Southeast Arizona Land Exchange and Conservation Act* will accomplish this goal.

Key Facts

Resolution Copper is asking for approximately 2,000 acres of National Forest land in the Oak Flat area, 695 acres of which will be set aside as an Apache Leap conservation easement to permanently protect that area. In return, Resolution Copper will transfer over 5,500 acres of high-priority conservation lands to the US government.

The parcels that will be conveyed to the US contain:

- More than 20 miles of intermittent or ephemeral streams.
- At least two miles of perennial streams.
- More than 1,300 acres of Federal Emergency Management Agency (FEMA)-designated floodplains.
- 1,766 acres of National Wetlands Inventory (NWI)-designated wetlands.
- Habitat for a number of listed, candidate or proposed threatened or endangered species, including the Southwestern willow flycatcher,

Chiricahua leopard frog, Mexican spotted owl, bald eagle, Gila topminnow, headwater chub, Arizona hedgehog cactus and Arizona agave.

- Cultural resources such as Euro-historic sites and unknown prehistoric sites, including significant petroglyphs.
- No hazardous materials amounting to an ASTM-recognized environmental condition have been encountered.

In contrast, the acreage Resolution Copper is requesting contains 12 miles of predominantly ephemeral channels, no floodplain and less than one acre of wetlands. The parcel is home to a few Arizona hedgehog cactus plants, but no other threatened or endangered species.

Cultural resources consist of Civilian Conservation Corps check dams, limited prehistoric sites and some proto-historic/recent Apache sites. The latter are located primarily within the area of



Cave Creek

Apache Leap that is protected from disturbance by the land exchange bill. In addition, the land exchange bill has provisions that help further the Town of Superior's vision for the future. Less than five square miles and almost completely surrounded by public lands, the town is in dire need of developable land for housing and commerce. The land exchange bill will help the town acquire almost 200 acres west of town.

By way of the land exchange, Superior will also receive title to the historic Fairview Cemetery. This site has been used for almost a century by the residents of Superior, but is located on National Forest property. The town has tried to acquire title to this land for many years. The land exchange helps it realize this goal.

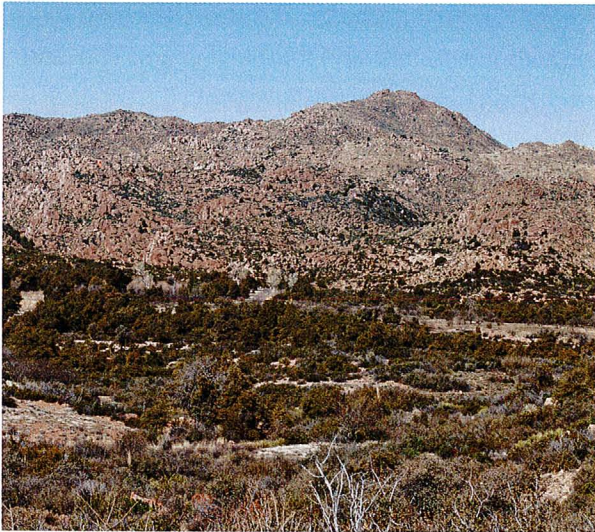
Key Provisions in the Land Exchange

- Transfer of land needed for mining operations in and around Oak Flat Campground from the federal government to Resolution Copper. (In return, Resolution Copper will transfer over 5,500 acres of high-priority conservation lands to the US government.)
- A financial commitment from Resolution Copper to support development of one or more campgrounds to replace the existing Oak Flat Campground facilities within the Tonto National Forest.
- Conservation and protection of the scenic escarpment above the Town of Superior known as Apache Leap.
- Monies for improved access within and around Apache Leap.

In June 2008, Senator Jon Kyl introduced a new bill, S.3157, with the following improvements to the past land exchange legislation:



Appleton Ranch



Oak Flat



7B Ranch on the San Pedro River

- New language to require a full Environmental Impact Statement (EIS) on all mine activities prior to mine opening. This action will be subject to public comment.
- 956-acre Appleton Ranch parcel added to exchange package in lieu of \$7.5 million cash payment to the US government.
- 110 acres of Resolution Copper land on Apache Leap will be conveyed to the Forest Service to enhance management of Apache Leap conservation easement.
- 7B Ranch on the San Pedro River will be added as a new unit of the San Pedro Riparian National Conservation Area. Cash equalization money paid to the US government placed in a special account to be used solely for San Pedro River land acquisition, management or protection.
- The Forest Service will build an Oak Flat Campground replacement(s) in four years instead of two.
- Funding for Oak Flat Campground replacement doubled from \$500,000 to \$1 million in order to address Forest Service concerns.
- Forest Service will own and operate Oak Flat Campground (approximately 75 acres) for four years after bill enactment. Resolution Copper can drill under that area, but no surface disturbance will be allowed until land transfers to Resolution Copper.
- Resolution Copper's 95-acre "Pond" parcel will be added to lands conveyed to Forest Service for the benefit of area recreation groups.

- Provision was deleted that called for closure of Magma Mine Road, Euro Dog Valley and Looner Land climbing areas upon bill enactment.
- Expanded appraisal provisions to protect the public if actual mine production exceeds levels assumed in appraisals prepared at the time of the exchange.

Environmental Impact Statement

Resolution Copper is currently completing the extensive baseline work needed to identify all potential environmental impacts of our mining operations. We will then determine how to maximize positive effects while minimizing negative impact. Baseline studies include a detailed analysis of all potential mining operation sites in order to examine a broad range of environmental and cultural factors. Examples include water and air quality studies, determining if endangered species inhabit the areas, and discovery and protection of cultural artifacts. The result of this work will be an Environmental Impact Statement that helps guide our operations and which we plan to make available to the public by 2010.

“As Rio Tinto moves into new geographical areas, our success in meeting economic, social and environmental challenges simultaneously will be an increasingly critical determinant of our business performance.”

—Rio Tinto Chairman Paul Skinner

About Resolution Copper Mining



Verde Building

Resolution Copper Mining (RCM) is a limited liability company, owned 55 percent by Resolution Copper Company, a Rio Tinto PLC subsidiary, and 45 percent by BHP Copper, Inc., a BHP-Billiton PLC subsidiary. Resolution Copper Company is the manager of RCM, located in Superior, Arizona.

Rio Tinto is a world leader in mining and exploration. The company discovers, mines, processes and supplies metals and minerals that make modern life work. Rio Tinto has over 100,000 employees worldwide, with activities in 50 countries across five continents.

At Resolution Copper, we are committed to supporting a diversified economy and the development of sustainable communities. During the last year, we gathered extensive feedback from members of our communities through public opinion surveys and personal communications. We asked people to identify the most important issues facing their communities. These results, coupled with Resolution Copper's corporate objectives, allowed us to develop a thoughtful plan for focusing our resources. This includes financial contributions, matching gifts, in-kind donations and employee volunteerism. We apply these same principles when seeking partnerships.



Resolution Copper is pleased to have an active partnership with the Town of Superior.



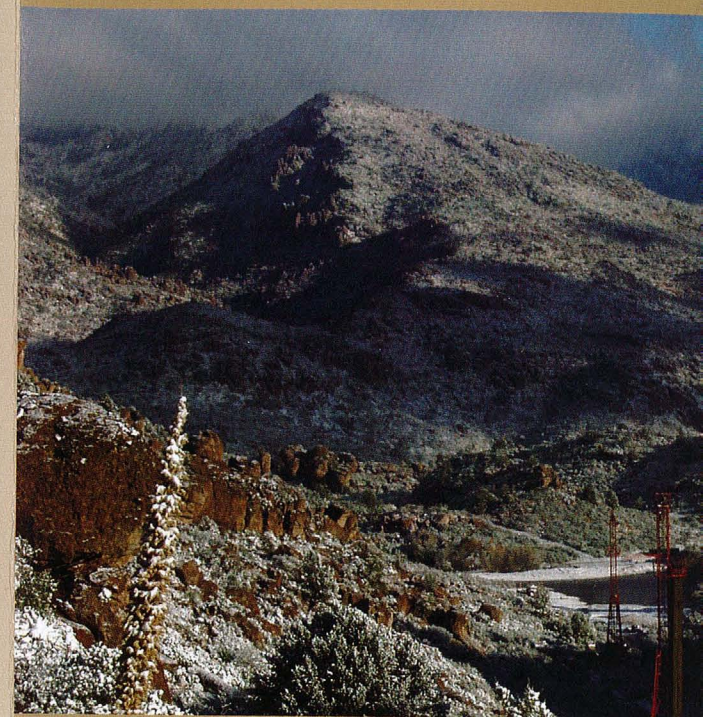
www.resolutioncopper.com

Submit Requests and Documentation to:

Resolution Copper
Attention: Corporate Communications
2525 E. Arizona Biltmore Circle, Suite C-135
Phoenix, Arizona 85016

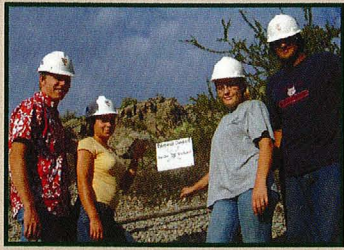


Resolution Copper Company
Community Investment and
Charitable Giving

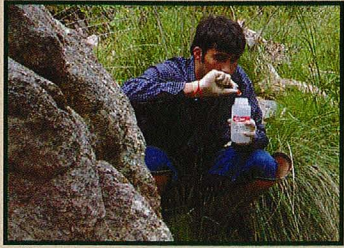


The Resolution Copper Project is located near the Magma Mine in Superior, Arizona.

A member of the Rio Tinto Group



Participants in Resolution Copper's Summer Internship Program learned the value of environmental stewardship.



Resolution Copper's Summer Internship Program gave students an opportunity to gain practical experience and have some fun too!

Our Giving Is Focused on the Following Areas:

Education

Resolution Copper supports educational and vocational training institutions and initiatives that will help build a skilled workforce. Resolution Copper supports schools and programs that encourage academic achievement; develop, encourage and sustain student interest; and support teacher enrichment. We will also assist organizations that develop and promote entrepreneurial skills.

Environment

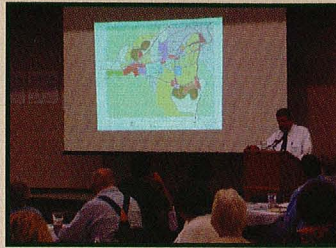
We take seriously our commitment to promoting and maintaining environmental responsibility in our communities. Accordingly, we support programs that make meaningful contributions to the preservation of biodiversity and resource conservation. We also assist environmental awareness programs and educational outreach organizations that encourage environmental stewardship.

Community Development

We support organizations that focus on building stronger communities, giving priority to programs that promote economic development, support job training, and provide amenities for our local communities. This also includes support for arts and culture, youth recreation, and civic projects, as well as assistance for organizations providing basic human essentials for those in need.



Resolution Copper supports volunteer service organizations such as Superstition Search and Rescue.



Roy Chavez, town manager for Superior, presented Superior's General Plan and described the town's blueprint for its future at an economic development forum sponsored by Resolution Copper in October 2004.

Grant Requests

Resolution Copper will consider grant requests from organizations that meet the following criteria:

- Provides proof of qualifying non-profit status, including a tax-exempt determination letter from the Internal Revenue Service
- Is located in communities that are served by the Resolution Project
- Demonstrates commitment to enhancing the quality of life for its community

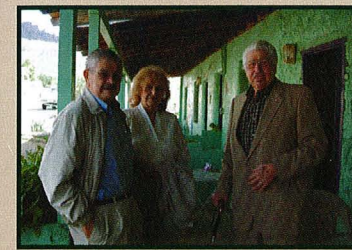
General Exclusions

Resolution Copper does not support the following:

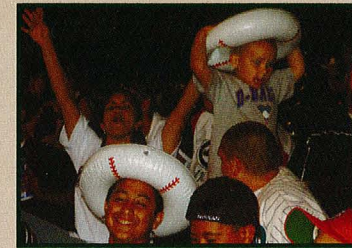
- Organizations that discriminate on any basis
- Fraternal, sorority or alumni organizations
- Individuals
- Religious organizations
- Political or lobbying organizations
- Capital Campaigns
- Fundraisers
- General Advertising

Grant Cycles

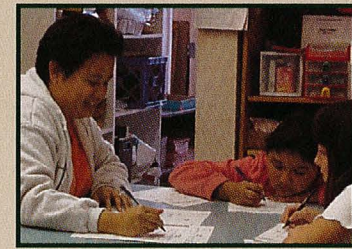
Resolution Copper's corporate giving committee reviews requests for support on a quarterly basis. Requests may be submitted year round and will be reviewed in March, June, September and December. Organizations will be notified in writing regarding a final decision.



Resolution Copper interviewed 18 former copper miners as part of the company's Living History Program. Resolution Copper wants to acknowledge the contributions of those that came prior, and believes people are its greatest attribute for future success.



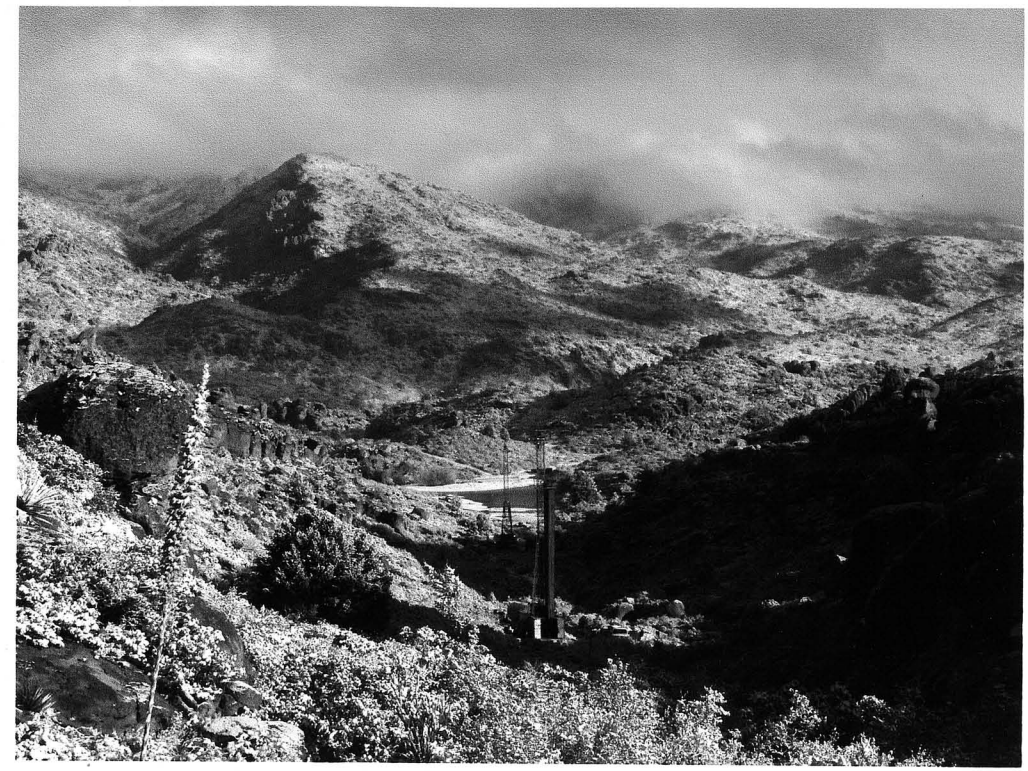
In the spring of 2004, students and staff from Superior's Junior/Senior High School enjoyed a fun-filled evening at Bank One Ballpark courtesy of Resolution Copper.



Kennedy Elementary School kids participate in a job shadowing program that gives them an opportunity to learn more about nature and the environment. Resolution Copper is a corporate sponsor and educational outreach partner of the Boyce Thompson Arboretum.



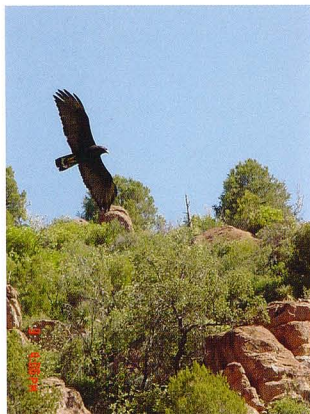
Resolution Copper, Arizona Game and Fish, and Boyce Thompson Arboretum joined together to celebrate International Migratory Bird Day in May 2004 at the Boyce Thompson Arboretum.



Resolution is committed to environmental sustainability. For the past two years the company has been conducting environmental investigations on the Resolution Study Site and the surrounding area. The company is now collecting background data across a broad area for all environmental media including air, land, water, plants and animals. If the project goes forward, this background data will help Resolution monitor environmental impacts.

- Scientists are gathering data about the amount and location of surface water and taking samples to measure water quality. They are also noting the types of plants and wildlife found in these wetter areas.
- The amount of water flowing through the canyons is measured four times annually. In Devils Canyon, monitoring locations with electronic probes are constantly tracking water flow. The probes also continually measure the water's pH, temperature and clarity. Resolution has plans to install several monitoring wells in 2004 to collect information about groundwater in the Resolution Study Site area.
- Air quality and meteorological stations installed at three locations in and around the Resolution Study Site monitor rainfall, evaporation, wind speed and direction, humidity, barometric pressure and temperature. Air quality measurements include: PM₁₀ (fine airborne "particulate matter"), air clarity (measured by nephelometers) and SO₂ (sulfur dioxide emissions primarily come from nearby smelters and power plants).

Wildlife studies on the Resolution Study Site are numerous. Activities include locating and identifying birds, monitoring ponds and pools for reptiles and amphibians, and recording information about sensitive species and their habitats.



The environmental team has carefully mapped the vegetation at the Resolution Study and has recorded the types and locations of plant species. The vegetation falls into two major plant community types, both of which are common in Arizona.



- "Interior Chaparral", which consists of low-growing shrubs such as manzanita and oak brush.
- "Upland Sonoran Desert Scrub", which consists of cactus, yucca, and low-growing shrubs such as acacia.

A thorough investigation of all of the historic and prehistoric sites on the Resolution Study Site is complete. Both historic and prehistoric sites were recorded.

Our studies confirm that the Civilian Conservation Corps (CCC) had a camp in the Oak Flat area in the 1930s, and the workers built mini erosion control features known as "check dams" in the area.



Example of a dry-laid masonry "check dam" with three courses of stone

The area around the No. 9 Shaft is often used for camping, bouldering and rock climbing, cattle grazing, prospecting, hunting, four-wheel driving and hiking. Resolution is working with recreational groups to address their needs and provide them with a continued source of enjoyment.



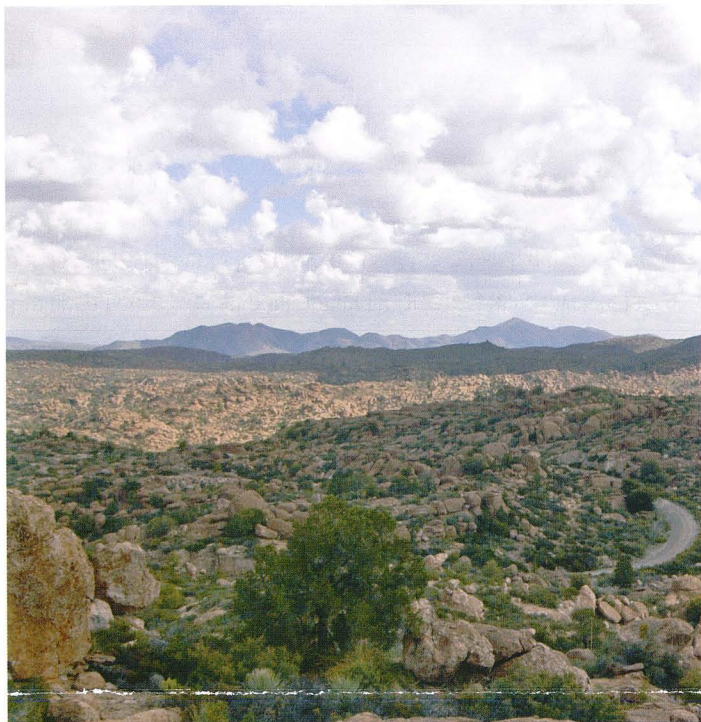
Some of the shafts and adits from previous mine projects are suitable bat habitats.



Rio Tinto is the largest diversified mining company in North America, and Resolution Copper is a part of the Rio Tinto Group.

- Rio Tinto is a global leader in finding, mining and processing the earth's mineral resources.
- The Group either owns or shares an interest in many of the world's largest mineral deposits.
- Worldwide operations supply a broad range of minerals and metals: aluminum, copper, diamonds and gold, energy products (coal and uranium), industrial minerals (borax, titanium dioxide, salt, talc and zircon) and iron ore.
- Rio Tinto Group companies are in more than 40 countries, employ about 35,000 people and own assets worth approximately \$13 billion.
- Rio Tinto takes a long-term and responsible approach to all aspects of its business, concentrating on the development of first-class orebodies into large, long-life, efficient operations capable of sustaining competitive advantage.
- The Group bases its success on the quality and diversity of its assets, the skills of its people, and its commitment to be a global partner and a local neighbor.
- Wherever a Rio Tinto business operates, it is committed to work closely with its hosts, striving to respect laws and customs, minimizing adverse impacts, and ensuring the transfer of benefits and the enhancement of local opportunities.

Learn more at www.riotinto.com



Resolution Copper Hosts Community Open House

On Saturday, February 28, 2004, Resolution Copper hosted a community open house from 10 a.m. to 1 p.m. at Superior High School. More than 300 residents, town council members, government officials and company personnel were in attendance.

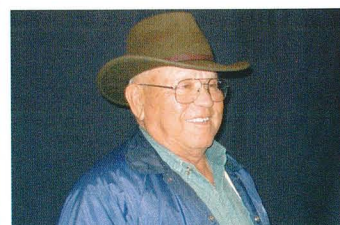
The open house was an opportunity for greater public involvement and for all residents to learn more about the project, get to know our staff and get answers to frequently asked questions.

Displays included information about the project and its promising economic impacts, potential processes to be used to develop the mine, and background on Rio Tinto. There was also information about Resolution Copper's community involvement programs and sustainable development initiatives, environmental studies and land use issues, in addition to an interactive station displaying the Web site (resolutioncopper.com). Los Hermanos Mexican Restaurant provided a delicious lunch and Superior High School's culinary students assisted with serving and cleanup.



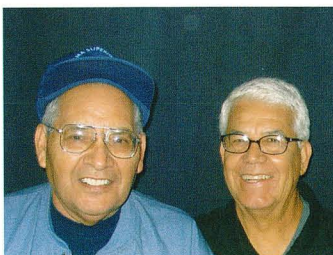
Bruno Hegner, vice president and general manager of Resolution Copper (far right), with local, state and federal officials.

A highlight of the open house was the miner's tribute table. Former miners were asked to register in a special book and include their dates and location of service. Each registrant received a specialty copper pin shaped like the state of Arizona and engraved with the wording "Magma Copper Company 1911-1996." Each miner also had his photograph taken by a team member, which will be included in a permanent record by Resolution Copper.



Friends reunite at the Resolution Copper Open House.

The event provided the ideal forum to get acquainted with Resolution Copper personnel and learn about the project. Team members were available to answer questions, listen to comments and gain valuable insight, making the community open house a win-win for all who attended.



Thank You for Your Community Support

I would like to take this opportunity to thank the residents of Superior for their broad community support of the Resolution Copper project, and for making us feel so welcome.

We could not manage a project this vast without the collaborative efforts of others. Members of our citizens committee and many local organizations have offered valuable input, which has contributed to our initial success. We look forward to having a long-term partnership with the Town of Superior, and to helping enhance the quality of life for future generations.

-Bruno Hegner
Vice President and General Manager

RESOLUTION COPPER PROJECT PROGRESSES TO NEXT PHASE; COMPANY PREPARES TO TRANSITION TO MANAGER AND UNDERTAKE SEVERAL INITIATIVES

Resolution Copper has enjoyed an ongoing dialogue with community leaders in Superior and has established a citizens committee to provide us with invaluable feedback on key issues and how we can work together as the project moves forward. We will continue to discuss critical issues impacting Superior and to identify solutions which are mutually beneficial to the town and to Resolution Copper.

On May 1, 2004, Resolution Copper becomes manager of the project. Our plan is to continue further environmental and geotechnical evaluations of the property and undertake two voluntary remediation projects to clean up the existing mine site.

One of those projects will involve closing adits, tunnels and other workings that remain from previous mining operations. The identification and securing of the open workings is an undertaking initiated by BHP. Earlier this year, Resolution Copper conducted a follow-up survey to map the open workings and ensure public safety was not at risk. We have identified several closures that have become open again or were overlooked in the initial survey. The next stage involves ranking the opening workings in terms of hazard and risk to public safety. Over the next several months, we will invest the

necessary monies to close the most dangerous workings identified in the survey, while simultaneously ensuring the free movement of bats, snakes and other creatures.

The second initiative will focus on improvement of housekeeping and stormwater retention capabilities on the West Plant Site near town. As part of this effort, we are working closely with graduate students from the University of Arizona and the National Science Foundation to see whether native plants can be grown in the tailings.

In 2004, we will invest almost \$2 million toward this two-pronged initiative.

We will keep you posted on our progress in future newsletters and on our Web site (resolutioncopper.com).

Safety Note: At Resolution Copper, safety is our top priority. It is very unsafe to enter any open mine workings since they may harbor dangerous gases, unseen shafts and stopes, or may have poor roof conditions. You may also encounter some critters that do not welcome human company.

Please remember that Queen Creek Canyon is private land owned by the mining company. Recreating and hiking on these lands are discouraged. Anyone entering these private lands does so at their own risk.

SAVE THE DATE!

ICE CREAM SOCIAL

**TUESDAY, MAY 18, 2004
4:30 P.M. - 6:30 P.M.**

**West Plant Site
102 Magma Heights
(just east of town)**

Please join us to celebrate Resolution Copper's transition to manager of the Resolution project.

Treats include delicious ice cream, live entertainment, plus face painting and balloons for the kids. There is no charge to attend this event.

Resolution Copper Announces New Hires

Tony Martinez will join the staff of Resolution Copper as Underground Maintenance Technician.

Bill Williams also joins the Resolution Copper team as Environmental Manager. In this role, he will be responsible for environmental compliance and issues related to reclamation of the West Plant Site.

Please join us in welcoming Tony and Bill to the Resolution Copper team!

Congratulations 2004 Scholarship Winners!

In keeping with our commitment to support education, Resolution Copper continues to award scholarships to deserving graduating high school seniors from Superior, Globe and Miami. This year Resolution Copper has increased the award to \$1,500 annually for a maximum of four years, making the total grant worth \$6,000.

Winners were selected based on academic achievements, extracurricular activities, community outreach, leadership qualities and future goals. Congratulations to the 2004 recipients!

Superior High School: Jasmine Gomez and Adrian Armijo

Miami High School: Ryan Das

Globe High School: Tyler Polenz

International Migratory Bird Day Celebration Set for May 8, 2004

Come participate in International Migratory Bird Day with Arizona Game and Fish, Resolution Copper and the Boyce Thompson Arboretum on Saturday, May 8.



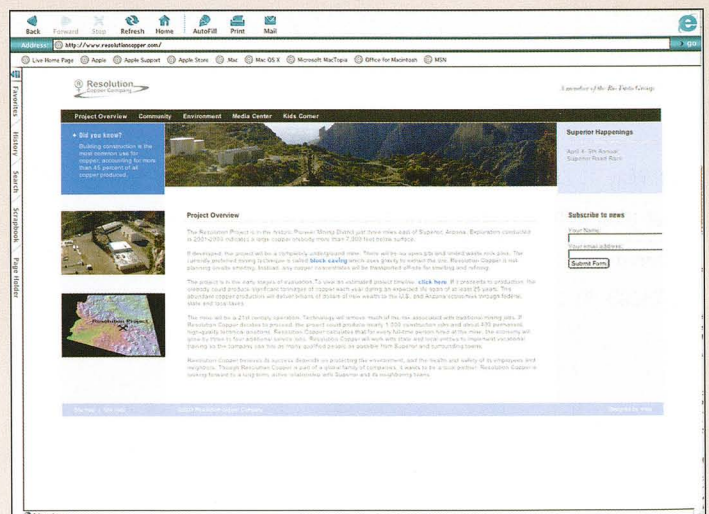
Photography by Richard Ditch



Join us as we celebrate and support migratory bird conservation. Events include a guided bird walk, avian photography class, Birdwatching 101 class and fun activities for the kids, including Bird Bingo! Gates open at 7 a.m. The cost is just \$6 for adults and \$3 for children. Kids under 5 years old may enter free of charge. Attendees will also have the chance to purchase a one-of-a-kind calendar made especially for this event.

Resolution Copper Launches Web Site

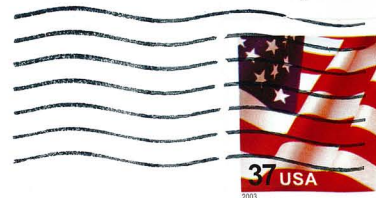
We're excited about our new Web site, resolutioncopper.com. Read about our progress, learn about our community programs, and get answers to the most frequently asked questions. There's even an interactive section for kids. In addition, you can sign up to receive Resolution Copper's newsletter and e-alerts at resolutioncopper.com in the Subscribe to News section found on each page.



We hope you will enjoy looking around and giving us any feedback that you may have.



102 Magma Heights
Superior, AZ 85273



Diane Bain
Or Current Occupant
1502 W. Washington
Phoenix, AZ 85007

85007+3210 17



Jennifer Russo of Resolution Copper Company recently shared her favorite childhood story with the children at HeadStart in Superior.



Tim Marsh of Kennecott Exploration gave it his all at this year's Superior Apache Leap Mountain Festival in the mining competition. His colleagues from Resolution Copper were there to cheer him on.



Resolution is fortunate to have the support of Rio Tinto, the largest diversified mining company in North America. The company has made a firm commitment to the principles of sustainable development. Rio Tinto, however, does more than just talk about doing good works. The case studies below show how various business units within Rio Tinto have put sustainable development into action and are realizing the mutual benefit of a commitment to people, health, safety and environmental excellence. Resolution Copper intends to adhere to these same principles in the development, closure and rehabilitation of its mine site.

Flambeau

In Ladysmith, Wis., the Flambeau Mine began operations against a background of skeptical community opinion. But the company engaged the community, kept faith with all of its environmental promises and restored the site to a place of natural beauty and recreational uses.

The open-pit mine yielded 181,000 tons of copper, 334,000 ounces of gold, and 3.3 million ounces of silver in just four years. The mine closed in 1997 and reclamation work was completed in 2000. This was followed by extensive revegetation of the site.

In addition to backfilling the pit, 90 percent of the mine site was replanted as grassland and trees along the wetland area. Site monitoring will continue for up to five years and groundwater quality will be monitored for the next 40 years. Flambeau's administration, laboratory building and railspur were leased to the local Ladysmith Industrial Development Corporation and continued to provide benefits to the community.



A view of active mining operations



The results of extensive reclamation work

Ridgeway

From 1988-1999, Kennecott Ridgeway Mining Company operated a 15,000 tons-per-day open-pit gold mine five miles east of Ridgeway, S.C. The company was determined to be a good partner to Ridgeway and planned to restore the lands disturbed by the mining process.

When the mining and milling operations ended, the reclamation team covered the 300-acre tailings pond with a three to six-inch layer of saprolite, reseeded the area, and successfully grew cover crops on the tailings despite a drought that struck the entire state.

The project is now in the Interim Reclamation Phase, defined as that period during which both North and South pit lakes fill with water to achieve their final levels. Long-term monitoring of the site will continue for about 30 years. Future uses for the site are currently under review, but could include facilities for education, training and professional development with passive recreational opportunities such as birdwatching, walking and fishing.



Construction of the Ridgeway Wetlands connecting the two open-pit lakes



The results of extensive reclamation work at Ridgeway Mine

Kennecott Energy Company

Kennecott Energy Company Mountain Plover habitat showcases the Rio Tinto Group's best practices in preserving the environment.

Kennecott established the habitat near its Antelope coal mine in Wyoming. Survey teams working near the mine since 1978 had spotted the mountain plover, a migratory bird monitored by the U.S. Fish and Wildlife Service. Kennecott and others studying the mountain plover noticed the birds nesting and rearing their young near prairie dog colonies at the mine site and the surrounding area.

In 1999, the Antelope mine launched a project to turn reclaimed land into a mountain plover habitat. Luring the mountain plovers to the site was critical, and the Antelope team created new prairie dog colonies to attract the birds. They began transplanting the prairie dogs in 2000. While it wasn't an immediate success, the team refined its methods. As of 2003, there were four viable prairie dog colonies.

The habitat is an essential part of meeting the reclamation goals and a bond release. The project has also earned accolades from state officials. In 2003, this project received the National Excellence in Surface Mining and Reclamation Award from the Office of Surface Mining, the Wildlife Habitat Reclamation and Stewardship Award from the Wyoming Game & Fish Department, the Wyoming Wildlife Habitat Conservation Award and the Wyoming Department of Environmental Quality Excellence in Surface Mining and Reclamation Award.



A bobcat roams the land



Prairie dogs explore the colonies

U.S. Borax Mine

For over 130 years, U.S. Borax has mined for refined borates — minerals with a wide variety of uses: from treating lumber to prevent termites, to plant nutrients that increase crop yield and quality. Continued mining and expansion plans make environmental stewardship and mine site reclamation a critical component of its operating strategy. Borax, however, also sees it as an opportunity to support workforce development in the community.

For ten years, U.S. Borax's operation in Boron, California (near Death Valley), embarked on a revegetation project. With only limited success to show for its efforts, Borax elected to partner with Victor Valley College, a nearby community college. The three-year partnership commits \$10,000 per year toward a student internship program combining academic and practical approaches to sustainable development challenges. As a result of the partnership with Victor Valley College, mortality rates for transplants are dropping and the transplant rate is expected to rise from 100 plants to 500 annually in 2004. Student interns



The partnership between Victor Valley College and Borax will benefit the environment for years to come

learn nursery cultivation and reclamation site challenges, along with regulatory and permitting requirements first-hand by participating in Borax-related reclamation activities.

Following Borax's lead, two other High Desert mining companies have entered into partnerships with Victor Valley College in nursery development and site reclamation. Mitsubishi Cement Corporation and Specialty Minerals Corporation, both of nearby Lucerne Valley, have enlisted the help of the college to find reclamation solutions in ongoing programs.

These are just a few of the many success stories that showcase Rio Tinto's commitment to environmental excellence. To read more stories from around the world, visit www.resolutioncopper.com/casestudies.

THE RESOLUTION COPPER DEPOSIT, A DEEP, HIGH-GRADE PORPHYRY COPPER DEPOSIT IN THE SUPERIOR DISTRICT, ARIZONA

Geoff Ballantyne, Tim Marsh, Carl Hehnke, Dave Andrews, Amy Eichenlaub & Ken Krahulec
Kennecott Exploration Company

INTRODUCTION

Manske and Paul (2002) described a recently discovered, deep, high-grade porphyry copper deposit in the Superior (Pioneer) district of Arizona. Their description, written after just five core holes had intersected an apparently coherent zone of $>1\%$ Cu mineralization, provides a remarkably complete picture of the upper parts of the mineralized system.

Following initial drilling, which was carried out by Magma Copper Company and by BHP, Kennecott secured an option to earn a 55% interest in the copper deposit through further exploration expenditures. The deposit was named the Resolution deposit and a program of deep surface drilling commenced in July 2001. Since that time 17 additional deep core holes have been completed, most of them to depths of more than 2000m. This paper, which is intended to accompany an oral presentation, provides an update of the geology of the deposit based on drilling through hole RES-5B completed in January 2003.

LOCATION AND DISCOVERY

The Resolution deposit lies within a prominent ENE-trending, 50km-long belt of porphyry copper deposits and related copper-bearing veins and mantos that extends from the Magma mine in the southwest to the Old Dominion mine in the northeast (Peterson, 1962). Resolution lies immediately southeast of an east-west trending zone of vein and manto deposits developed by the Magma mine, and 3.5km southwest of the undeveloped Superior East deposit, a zone of buried vein-controlled and disseminated bornite-chalcocite mineralization reported by Sell (1995).

From 1972 or earlier, it had been recognized that a porphyry copper deposit probably lay concealed beneath post-mineral formations in the Superior district (Hammer, 1972; Einaudi, 1982). However, mining economics always dictated that exploration was directed at discovery of high-grade vein and replacement ores. In 1991 Mark Sander and others within Magma Copper initiated an aggressive new program of surface and underground exploration for additional vein and replacement ores to augment the reserves of the Magma mine. Sander invited participation by Don Hammer, Marco Einaudi, and several graduate students from Stanford University (Don Hammer, pers. comm., 2001).

The Resolution deposit was ultimately discovered by underground drilling in 1995 and 1996. A subhorizontal hole, 527E, drilled to the south from the 3600 level of the Magma mine, was completed in February 1995. It intersected sericitized rocks carrying abundant pyrite and several veins containing hypogene chalcocite. Magma's exploration team surmised that these rocks must overlie a porphyry copper deposit (Manske and Paul, 1996) and drilled a follow-up hole beneath the first hole. The follow-up hole, S27H, completed in January 1996, passed out of the sericitized and pyritized rocks into biotite-altered rocks carrying strong porphyry-style chalcopyrite mineralization. The last 43m of S27H averaged 1.94% Cu.

REGIONAL & DISTRICT GEOLOGY

The regional setting and economic geology of the Superior district are well documented (Sell, 1961; Gustafson, 1962; Hammer and Peterson, 1968; Peterson, 1969; Schott, 1994; Paul and Knight, 1995; Frieauf, 1998; Pareja, 1998; and Manske and Paul, 2002).

The Resolution deposit underlies a plateau comprised of post-mineral welded tuff that caps a north-trending mountain range. Listric basin and range type faulting has tilted the mountain range to the east and exposed Lower Proterozoic through Pennsylvanian sedimentary rocks along the western flank of the range.

The Proterozoic rocks consist of 1.7 Ga quartz-mica Pinal Schist and a 4Q0 east-dipping sequence of relatively unmetamorphosed shales, quartzites, and limestones of the Upper Proterozoic Apache Group. The sediments are intruded by thick sills of diabase that have been dated at 1.04 to 1.12 Ga in the Ray mine 15km to the south (Banks et al., 1972).

A sequence of platform sediments disconformably overlies the Proterozoic rocks and likewise dips at about 40° to the east. It includes the Cambrian Bolsa Quartzite, Devonian Martin Formation (mostly dolostone), Mississippian Escabrosa Formation (mostly limestone), and the Pennsylvanian Naco Formation (mostly limestone). Permian and Cretaceous rocks are present but only known from drilling.

Underground workings and drilling have identified an unusual 1.5km north-south by 1.5 to 2.5km east-west "graben" beneath the Tertiary cover rocks that contains a 1 300m-thick package of volcanoclastic rocks, tufts, pebbly sandstone, and conglomerate. Correlation has been proposed with Cretaceous rocks exposed near the Christmas mine 40km to the south (Hammer, 1972; Schott, 1994; Manske and Paul, 2002). The northern boundary of the graben has been cut in mine headings and numerous~ underground drill holes where it is a steeply dipping mineralized fault. The other boundaries are poorly defined.

Tertiary post-mineral cover rocks include an eastward-thickening wedge of fluvial conglomerate and overlying lacustrine sandstone collectively known as the Whitetail Conglomerate and a welded dacitic tuff sheet known as the Apache Leap Tuff. The Whitetail Conglomerate feathers out 1 km to the west of the Resolution deposit, is 450 to 600m-thick over the deposit, and thickens to more than 1500m adjacent to the Devil's Canyon growth fault 2km to the east of the deposit. The overlying Apache Leap Tuff is a 400 to 500m-thick, sub-horizontal layer of welded 18.6 Ma dacite tuff. It forms an extensive rocky plateau bounded by cliffs that exhibit spectacular columnar jointing.

Only minor volumes of felsic intrusive rocks are exposed at surface in the district. The Silver King stock, a 2 by 3km, quartz diorite stock intrudes Proterozoic and Paleozoic rocks 6km NW of the Resolution deposit. Narrow felsic dikes and sills cut the Paleozoic carbonates at the surface west of the deposit and in mine workings (Hammer, 1972).

There are no currently active mines in the Superior district. Early production was of native silver from east-trending veins that cut the Proterozoic and Paleozoic rocks. Below the oxide zone, the veins were found to carry bornite, chalcocite, chalcopyrite, tetrahedrite, and sphalerite, and in the Magma mine, the largest mine, the veins were followed eastward for 3km. From the mid 1960s through closure in 1996 most of the production from the Magma mine was from chalcopyrite-bornite-chalcocite-pyrite-specularite mantos within the Paleozoic carbonate sequence adjacent to the veins. The district has produced 24.5 million tonnes of ore grading nearly 5% copper (Paul and Manske, 1999).

GEOLOGY OF THE RESOLUTION DEPOSIT

Figure 1, a cross section through the Resolution deposit and Shaft 9 of the Magma mine,

illustrates many of the geological features described below.

Proterozoic Rocks

Fragments of quartz-mica schist presumed to be derived from the 1.7 Ga Pinal Schist have been observed in Resolution drill core as xenoliths in dikes and as clasts in breccias but the schist has not yet been intersected in-situ.

Younger Proterozoic sedimentary rocks and/or diabase have been intersected in 16 of the 17 deep core holes drilled by Kennecott. The only hole that failed to intersect the Proterozoic rocks remained within a dike. Proterozoic rocks and breccias developed within them host the majority of the Resolution copper mineralization (84% of the material within the >1% Cu zone).

The Proterozoic sediments comprise an upward-younging sequence that has been correlated with the Upper Proterozoic Apache Group. The sequence cut by drilling, from oldest to youngest, is as follows:

- Dripping Spring Quartzite: Individual intervals of white to buff orthoquartzite up to 130m thick in several drill holes in the southeast sector of the deposit have correlated with the Dripping Spring Quartzite. The stratigraphic base of the quartzite has not been penetrated. It is always underlain by diabase or quartz monzonite.
- Mescal Limestone: Wide, structurally thickened intersections of mineralized and altered limestone in several drill holes in the northwest sector of the deposit have been correlated with the Mescal Limestone. The Mescal is typically underlain by diabase.
- Apache Basalt: Up to 10m of vesicular basalt locally overlies the Mescal. This basalt has been correlated with the Apache Basalt.
- Troy Quartzite: Up to 80m of arkosic quartzite and siliceous siltstone comprise the shallowest Proterozoic rocks intersected in the northwest sector of the deposit. These rocks have been correlated with the Troy Quartzite.

Thick diabase sills intrude the older parts of the Apache Group sediments and are important hosts to copper mineralization. One hole, RES-2A intersected multiple diabase sills over a vertical interval of 400m. Several holes bottomed in diabase. The diabase, which is typically dark-gray to black, consists of medium-grained, sub-ophitic intergrowths of plagioclase, pyroxene, and lesser quantities of amphibole, biotite, and Fe-Ti oxides. It is strongly magnetic except where it is well mineralized. Textures range from aphanitic to nearly pegmatitic, to strongly amygdaloidal. The diabase is an excellent host for copper mineralization, accounting for 40% of the material within the >1% Cu zone.

Volcaniclastic Rocks

Tufts, volcanics sediments, conglomerates and sandstones ("volcaniclastic rocks") that lie within a local depression concealed beneath the post-mineral cover rocks host the uppermost part of the Resolution copper deposit and most of the overlying pyrite halo. They account for 9% of the material within the >1% Cu zone.

The volcanoclastic rock package includes crystal and lithic tuff, immature volcanic sediment, pebbly sandstone and cobble conglomerate. Lithic fragments in the tufts include most of the older rock types exposed in the district. Quartz porphyry fragments locally predominate. Some well-mineralized horizons within the porphyry deposit are tufts (Proffett, 2001). Elsewhere the rock package consists mostly of sedimentary rocks and includes abundant quartzite and chert clasts (Schott, 1994).

The volcanoclastic rocks are underlain by sedimentary rocks of the Upper Proterozoic Apache Group. Quartz-rich sandstones and quartzite-rich conglomerate in the lower part of the volcanoclastic rock package are not readily distinguishable from the Upper Proterozoic Troy Quartzite. Based on drilling to date, the unconformity between the two rock packages appears to dip gently to the west. Faulting is not obvious at this contact; it appears to be depositional.

Hammer (1972, p. 25) reports that volcanic sediments dip at 180 to 220 to the east on the 3600 level of the Magma mine and Schott (1994, p. 26) reports an average dip of 360 to the southeast based on mapping of the 3600-3800 level ramp system. These dips approximate the dip of the base of the overlying Whitetail Conglomerate but do not conform to the underlying Proterozoic erosional surface. The volcanoclastic rocks are sufficiently poorly sorted that bedding cannot be reliably determined from drill core.

The geological setting of the volcanoclastic rocks is perplexing. The depression that has preserved them from erosion is almost equidimensional. If it is bounded to the north and south by east-trending faults, those faults do not extend far enough to the west to emerge from beneath the Tertiary cover, and they do not appear to be long enough to define a graben. Within the depression, the volcanoclastic rocks are sitting unconformably on the Upper Proterozoic rocks, with the entire Paleozoic section missing.

Blocks of carbonate rock up to meters across are present near the base of the volcanoclastic rocks and one interpretation suggested for these is that they may have fallen from a steep-walled void of some kind in the Paleozoic carbonate rocks. It is tempting to explain the void as an eruption feature. However, the lower part of any such feature has apparently been removed by some combination of faulting and erosion.

Intrusive Rocks

Felsic intrusive rocks are much less common at Resolution than in most porphyry copper deposits. Only 7% of the material within the >1% Cu zone is intrusive rock.

Quartz-Eye Porphyry: The most ubiquitous intrusive rock is a gray to white to tan porphyry consisting of phenocrysts of biotite, quartz, plagioclase \pm K-feldspar in an aphanitic matrix. The quartz eye porphyry is cut by the feldspar porphyry described below and is probably the oldest Laramide intrusive rock.

Feldspar Porphyry: A less-crowded porphyry with quartz, plagioclase and biotite phenocrysts in an aphanitic groundmass is less common than the quartz eye porphyry and tends to occur deeper in the deposit. The feldspar porphyry cuts the quartz-eye porphyry but its age relative to the quartz monzonite porphyry is not established. On average, the feldspar porphyry within the >1 % Cu zone carries slightly stronger copper mineralization than the quartz-eye porphyry. We suspect that it is closely associated temporally and genetically with the quartz monzonite porphyry.

Quartz Monzonite Porphyry: A white to buff, crowded quartz monzonite porphyry carrying abundant phenocrysts of biotite, quartz, plagioclase and K-feldspar within a fine-grained but holocrystalline matrix has been intersected in three deep core holes (RES-2A, RES-3, and RES-5). The quartz monzonite porphyry is inferred to be part of a larger stock that may be the source of the copper and molybdenum mineralization but is itself only weakly mineralized. Preliminary $^{40}\text{Ar}/^{39}\text{Ar}$ ages of 62.69 and 62.39 Ma for biotite phenocrysts and hydrothermal sericite respectively from the quartz monzonite probably bracket the age of mineralization (unpublished dates, New Mexico Institute of Mineral Technology).

Dike Orientations: The orientation of dikes is difficult to determine from sparse drilling and the margins of the dikes at Resolution are typically faulted making it difficult to obtain useful information from oriented drill core. Available drilling suggests that the quartz eye porphyry occurs as plugs, sills, and as an ENE-trending swarm of dikes. Feldspar porphyry dikes striking between ENE and east have been mapped along the Apache Leap range front and dikes follow many of the faults occupied by veins in mine workings (Hammer, 1972).

Heterolithic Breccia: A matrix-poor breccia occurs as irregular bodies that crosscut the Proterozoic rocks near center of the deposit (Figure 1). Breccia clasts include angular to rounded fragments of diabase, quartzite, schist, quartz eye porphyry, and fragments of strained quartz veins. The matrix typically consists of hydrothermal biotite. The breccia mostly commonly occurs within diabase.

Structure

As noted in an earlier section, large displacement, steep faults (concealed beneath the younger welded tuft sheet) appear to bound the Cretaceous volcanoclastic rocks. Even older faults may cut the Proterozoic rocks but not the Mesozoic rocks. Fortunately, most or all of the displacement on such early faults probably pre-dates the copper and molybdenum mineralization. To the extent that they can be defined by widely spaced drilling, broad patterns of alteration and mineralization zoning do not appear to be severely disrupted by post-mineral faulting.

Down-to-the-west movement on the Devil's Canyon fault appears to have rotated a 6km-wide fault block between the Devils Canyon and Concentrator faults to the east. The base of the 18.6 Ma Apache leap tuft dips at approximately 120° to the east above the Resolution deposit, while the base of the mid-Tertiary Whitetail Conglomerate dips to the east at approximately 25°. These relationships suggest that the Resolution deposit itself has probably been rotated to the east by about 25° and that about half of that rotation happened during deposition of the Whitetail Conglomerate.

Kennecott mapping has defined a detailed stratigraphy for the upper part of the welded tuft sheet. This has permitted the identification of several minor NW-trending faults with offsets from a few meters to a few tens of meters that cut the welded tuft sheet in the vicinity of the Resolution deposit. Manske and Paul (2002) also described a north-south trending fault zone named the Anxiety fault zone that crosses the center of the deposit. The Anxiety fault shows no appreciable post-18.6 Ma displacement.

Approximately 1500m of oriented core has been collected during Kennecott's drilling and orientations have been recorded for approximately 100 post-mineral shears. Two strong clusters of shears have mean orientations as follows: 060°/78° SE and 075°/52° NW (Hart and Hehnke, 2002).

A locally strong shortening and shear fabric is observed in several deeper intersections of diabase. The fabric is expressed as millimeter-scale, flattened, parallel, disk-shaped clots of biotite and grossly parallel chloritic sheared bands. Measurement of this fabric in oriented core suggests that the fabric defines an elongate dome-shaped pattern, the crest of which trends northward (Hart and Hehnke, 2002).

Veinlets that pre-date quartz-pyrite "D" veinlets, including milky quartz veins, magnetite-biotite veins, quartz-molybdenite veins, and the earliest chalcopyrite-pyrite veinlets, are folded and flattened parallel to the foliation in the diabase. Some early chalcopyrite-pyrite veinlets are shortened enough to appear ptigmatic. Stylolitic joints are observed in the same plane as the shear fabric. Quartz-pyrite "D" veinlets and late bornite-chalcocite veins cut the foliation.

The foliation may have formed through softening of the host rocks in response to an upward migrating thermal front that overprinted the earlier mineralization. Folding of early veins and development of foliation during the main stage of chalcopyrite mineralization may have tended to seal the mineralizing system, helping retain metalliferous fluids within a volume of reactive diabase and limestone.

Hydrothermal Alteration

A PIMA infrared spectrometer has been used routinely to identify alteration species in drill core following the lead of a study by Troutman (2001). Drill core has also been examined under ultraviolet light to help distinguish fluorescent minerals and map crosscutting relationships between veins. Representative samples have been examined petrographically by one of us (T.M.) and by William Chavez. X-ray diffraction studies have been commissioned as a last resort to identify a few difficult to identify species.

Resolution host rocks exhibit strong pervasive hydrothermal alteration and obvious alteration zoning patterns are evident. The central part of the strongest copper mineralization is associated with either 1) abundant secondary biotite in volcanoclastic rocks, siltstone, breccia, and diabase, or 2) garnet-diopside skarn, variably retrograded to calcite, clays, chlorite, epidote, and actinolite, in what were originally calcareous sediments.

The deep lateral boundaries of the >1% Cu zone are poorly defined by drilling. However, volcanoclastic rocks, siltstones, and diabase from holes close to inferred boundaries show zoning outward from biotite-altered rocks with associated chalcopyrite-pyrite mineralization to chlorite-epidote altered rocks with mostly pyritic mineralization. The boundary between potassic alteration and propylitic alteration consistently shows biotite veinlets and vein selvages *prograding* across pervasively propylitized rocks.

A thick zone of intense, pervasive quartz-muscovite-illite alteration overlies the central part of the copper mineralized zone. Over the center of the deposit, this zone of phyllic alteration extends upward for 400m with undiminished intensity to the erosional surface at the base of the Whitetail Conglomerate. Manske and Paul (2002) suggested that the phyllic zone transitions outward through an intermediate argillic zone to propylitized rocks.

Portions of the potassic zone and the entire quartz-muscovite-illite zone are commonly overprinted by structurally- and bedding-control led advanced argillic alteration. Characteristic minerals include kaolinite, dickite, and zunyite. The advanced argillic alteration is spatially associated with late bornite-chalcocite mineralization.

Anhydrite is common in veins and as breccia matrix in deeper portions of the deposit. It is typically leached within zones affected by advanced argillic alteration. gypsum is rare.

Mineralization

Resource Estimates: Kennecott and BHP Billiton have not announced resource estimates for the Resolution deposit.

Size and Shape of the Mineralized Zone: The best porphyry copper style mineralization occurs in a dome-shaped zone within which copper grades exceed 1% Cu *in the most receptive host rocks* (>1 % Cu zone"; Figure 1). The dome-shaped zone, which is greater than 1000m in diameter, is underlain by a more gently dome-shaped lower-grade core. The apex of the >1 % Cu zone lies 250m below sea level and the apex of the lower grade core lies 750m below sea level. The thickness, plunge, and depth extent of the lower edges of the copper "shell" between these surfaces are largely undefined.

Lithological Control of Copper Grades: Copper grades are strongly controlled by lithology. Diabase and limestone within the >1% Cu zone, locally carry more than 2% Cu but immediately adjacent quartz-eye porphyry dikes may carry less than 1 % Cu and adjacent quartzite locally contains less than 0.5% Cu.

Molybdenite: Most molybdenite occurs in early quartz-molybdenite veinlets. Subordinate amounts occur as "paint" on slickensided surfaces. Quartz-molybdenite veins typically lack copper mineralization. They do not cut copper-bearing veins. Although molybdenum mineralization is demonstrably earlier than all stages of copper mineralization, the two metals are broadly co-spatial. Molybdenum grades decrease rapidly upward into the pyrite halo. They decrease less rapidly than copper grades downward into the lower grade core.

Early Chalcopyrite-Pyrite Mineralization: Early chalcopyrite-pyrite mineralization at Resolution is similar to that seen in the central zones of many porphyry copper deposits. However, the sulfide veinlets tend to be wider than in lower grade deposits and the chalcopyrite tends to be coarser-grained and less intimately intergrown with pyrite.

The pyrite to chalcopyrite ratio ranges from about 3:1 to 1:1 in the chalcopyrite-bearing part of the >1% Cu zone within volcanoclastic rocks and diabase, and it decreases systematically with depth in those rock types. It varies erratically in other rock types.

Roughly equal portions of the sulfide minerals occur as disseminations and as fracture fillings. Chalcopyrite and pyrite locally occur in veinlets with quartz and/or anhydrite but many veinlets lack appreciable volumes of gangue minerals.

Pyrite Halo: A halo of unusually strong pyrite mineralization overlies and flanks the >1% Cu shell. Pyrite abundance increases upward to a maximum of about 10 weight percent 100 to 200m above the upper boundary of the >1% Cu zone, then decreases further above the copper zone. Pyrite is most abundant in the quartz-muscovite-illite alteration zone above the >1 % Cu zone but also extends laterally into adjacent propylitized rocks. Flat holes drilled from the 3600 level of the Magma mine, indicate decreasing pyrite content in the propylitized volcanoclastic rocks with increasing distance from the >1 % Cu zone.

Late Bornite-Chalcocite Mineralization: Earlier chalcopyrite-pyrite mineralization is locally strongly overprinted by late bornite and/or chalcocite mineralization. The late bornite-

chalcocite mineralization is strongly controlled by permeability and is often less pervasive than the preceding chalcopyrite-pyrite or pyrite mineralization. Bornite and/or chalcocite have often replaced the chalcopyrite and pyrite in veinlets and in vein selvages while chalcopyrite and pyrite further from veinlets may be incompletely replaced. Incomplete overprinting permits the upper boundary of the earlier chalcopyrite zone to be roughly defined. It appears that overprinting by bornite and chalcocite is strongest within the upper part of the chalcopyrite zone and the lower part of the pyrite halo.

Within overprinted zones, individual chalcopyrite and pyrite grains are commonly rimmed by or replaced with bornite. Replacement of bornite and pyrite by chalcocite appears to be a more fully developed stage of the same process as deposited bornite.

Bornite is most abundant in the volcanoclastic rocks, but traces of bornite occur throughout the deposit; bornite is often the predominant copper mineral in quartzites and quartz eye porphyry dikes, even in deeper parts of the deposit.

High-Grade Bornite-Chalcocite Veins: Two 1 to 3m-wide, steeply dipping, ENE-trending veins named the First South and Second South veins were developed by a crosscut to the south from the Magma mine on the 3600 level (Figure 1). The veins, which cut volcanoclastic rocks, carry abundant bornite and chalcocite (Schott, 1994). Similar but narrower veins were cut in some of the underground holes drilled across the top of the porphyry copper deposit and in RES-4B, one of Kennecott's surface holes. Drilling suggests that in the immediate vicinity of the porphyry deposit, high-grade, chalcocite-bornite veins are best developed between about 250m above sea level and 250m below sea level. They either die out upward and downward or, more likely, change to massive pyrite veins.

Sphalerite-Galena ± Chalcopyrite Veins in Propylitized Rocks: Thin quartz-sphalerite-galena±chalcopyrite veinlets are present in propylitized volcanoclastic sediments in Magma holes MB-11 and MB-11A on the southern margin of the Resolution deposit. Zoning is evident in these holes from sphalerite-galena veins at higher elevations to sphalerite-galena-chalcopyrite veins at greater depth. This zoning provides a vector toward porphyry-copper style chalcopyrite-pyrite mineralization.

Vein Orientations: Hart and Hehnke (2002) examined the orientations of 812 copper-bearing veins logged in oriented core. Approximately 70% of the oriented veins show apparently random orientations but about 30% of the veins fall within two clusters: 030°/60° NW and 050°/75° SE. Several chalcocite and bornite veins intersected in Kennecott drill hole RES-4B have strikes parallel to the First South and Second South veins.

Oxidation and Leaching at the Pre-Whitetail Paleosurface: A weathered and oxidized paleosurface is present beneath the Whitetail Conglomerate and has been cored in at least 20 drill holes. The depth of oxidation from the paleosurface to the top of continuous sulfides is highly variable, varying from 50m in Magma hole MB-10C to 322m in Magma hole MB-10A only about 100 meters away.

A strong "leached cap" characterized by abundant hematite and lesser jarosite is present in at least six holes. Core from holes that penetrate the base of hematitic capping suggests that the precursor mineral for most of the hematite is pyrite. Only a weak zone of supergene chalcocite deposition is present, typically with copper grades of less than 1%. The right processes seem to have occurred but leaching has affected only the pyrite halo of the deposit.

Discussion

Geological History

The geological history of the area hosting the Resolution deposit, from Upper Proterozoic time onward, includes the following elements:

Deposition of quartz-rich sediments and limestones in Upper Proterozoic time
Emplacement of diabase sills and effusion of basalt (Apache Basalt) at —1080 Ma
Deposition of carbonate-rich rocks on a continental shelf in Paleozoic time
Removal of the Paleozoic rocks by uplift or thrust faulting in post-Pennsylvanian time
Andesitic and dacitic orogenic volcanism, probably in the interval from —100 to 70 Ma
Erosion of the volcanic rocks to form immature sediments
Development of a steeply bounded local depression that preserved the volcanoclastic rocks
Intrusion of the volcanoclastic rocks by dikes between —70 and 65 Ma?
Emplacement of the Schultze Granite, a large ENE trending QMP stock at –65 to 63 Ma, and development of
a cupola beneath the Resolution deposit
Degassing of the QMP and/or other intrusions and generation of breccias
Separation of ore fluids from the deeper, last-to-crystallize portions of the QMP intrusion
Precipitation of quartz in early barren quartz veinlets
Precipitation of quartz and molybdenite in early veinlets
Deposition of veinlet and disseminated chalcopyrite and pyrite with accompanying potassic alteration
Deformation of all previously formed veins and local development of foliation in the diabase
Deposition of additional veinlet and disseminated chalcopyrite and pyrite with potassic alteration
Deposition of abundant veinlet and disseminated pyrite with accompanying illite-muscovite alteration
Replacement of earlier chalcopyrite and pyrite by bornite and chalcocite along with advanced argillic alteration
Oxidation of portions of the pyrite halo and precipitation of minor secondary chalcocite
West-side-down movement on the Devils Canyon fault, forming a half-graben
Deposition of Whitetail Conglomerate into the half-graben, covering the deposit
Eruption of the Apache Leap Tuff, protecting the deposit from erosion (and earlier discovery)
Continued Basin and Range style faulting

Causes For High Hypogene Copper Grades

The Resolution deposit exhibits higher hypogene copper grades than most other porphyry copper deposits in the southwestern USA. Two factors apparently combined to generate the higher grades: 1) favorable host rocks, and 2) superimposition of a late stage of bornite-chalcocite mineralization on earlier chalcopyrite-pyrite mineralization.

Favorable host rocks at Resolution include Proterozoic limestones and calcareous siltstones and Proterozoic diabase that originally contained abundant calcic plagioclase, hornblende and magnetite. As in some other porphyry copper districts (including Bingham; Atkinson and Einaudi, 1978; Harrison and Reid, 1997) interbedded unreactive quartzites and highly receptive lithologies may have been favorable for ore deposition. Thick, non-reactive quartzites at Resolution host only weak copper mineralization but may have channeled ore fluids for long distances to more favorable host rocks.

The Resolution porphyry displays strong late bornite-chalcocite mineralization that shows mineralogical similarities to late mineralization described at Butte (Proftett, 1979) and Collahuasi (Dick et al., 1994). This stage of mineralization is particularly important at Resolution because it not only generated large veins but also permeated significant volumes of rock in a manner similar to more common, early stage chalcopyrite-pyrite mineralization.

ACKNOWLEDGEMENTS

This paper is presented with the permission of BHP Billiton and Kennecott. We appreciate this permission and the consistent direction and financial resources made available by Kennecott and Rio Tinto management during the recent drilling program.

In addition to contributions by the authors and others cited, Tom Bourns, Jim Finch, Bill Hart, Jason Hefner, Katya Masun, Kierran Maher, Duane Olsen and Anne Pattison logged drill core, Miriam Hart managed the assay QA/QC program, Bill Hart and Tom Bourns led the effort to obtain and analyze oriented core, Jay Hammitt provided 3-D modeling support, Jon Gant mapped the post-mineral cover rocks, and William Chavez provided illuminating petrographic descriptions. Energetic geological discussions with all of these people and with Don Hammer, Scott Manske, Steve Potter, Alasdair Pope and John Main are warmly acknowledged.

Dynatec Drilling, based out of Salt Lake City, did a superb job of deep directional core drilling.

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COPPER'S VITAL STATISTICS & OTHER AMAZING FACTS

The name copper comes from the Latin word cuprum, which means "metal of Cyprus". The origins of the word copper dates back thousands of years when the Romans set up large copper mines on the Island of Cyprus.

Copper consumption averages over 30 pounds per person every year.

More than four million tons of copper is used annually to make electrical wiring.

The average new home contains approximately 500 pounds of copper in the form of electrical wiring, plumbing pipes, and brass fixtures.

Copper is the world's third most consumed metal, ranking behind iron and aluminum, respectively.

Copper in small amounts is essential to sustaining most plants and animals. Plants need copper to photosynthesize.

Copper is essential in the human diet. It helps iron-rich foods make red hemoglobin in the blood

Copper is man's oldest metal, dating back more than 10,000 years.

Bronze — perhaps the most notable alloy of copper and tin — was developed sometime before 3,500 B.C. and is credited for sparking the "Bronze Age" of Europe and Asia.

Copper and nickel make an alloy that creates a variety of useful materials boasting an exceptional resistance to corrosion.

The boiling point of copper is over 4,600 degrees Fahrenheit and its melting point is nearly 2,000 degrees Fahrenheit.

The rate of the world's copper consumption has grown 3.6 percent annually since 1992.

BY THE WAY...

The Statue of Liberty contains 179,000 pounds of copper.

The boilers on Robert Fulton's steamboats were made from copper.

One of the famous Dead Sea Scrolls found in Israel is made of copper instead of more fragile animal skins. Archeologists recovered a portion of a water plumbing system from the Pyramid of Cheops in Egypt with the copper tubing found in serviceable condition after more than 5,000 years.

Copper cookware is the most highly regarded by chefs around the world. Its noted advantages - high heat transfer (the highest of any material used in cooking) plus uniform heating (no hot spots).

Nearly 10,000 years ago, cave dwellers used copper axes as weapons and tools. Today, the most highly regarded surgeons use copper-clad scalpels that conduct an electric current that heats the scalpel to make it self-cauterizing.

ABOUT MINING IN GENERAL

Mining has a critical impact on every person in the US.

All 50 states have mining activities.

The United States uses more than 3.6 billion tons of new mineral materials yearly.

A 2000 study reports that more than 320,000 people work in mining in the US, which supports an additional five million jobs in manufacturing, engineering, environmental and geological consulting.

It is estimated that every American will use nearly 3.5 million pounds of minerals, metals and fuels in his or her lifetime.

Resolution Copper - draft

A porphyry copper deposit discovered near Superior has the copper-mining industry excited – an industry that has had little to cheer about for the past 6 years. Now, along with copper prices being close to record-high levels, there is the Resolution Copper deposit. It is difficult to decide what is the most remarkable aspect of this discovery. That it is huge? It may be the largest copper deposit in North America. Although resources have not yet been fully defined, it is estimated to contain at least a billion tons. That it is deep? It lies about 1000 feet below sea level and 57,000 feet below the surface. That it is high-grade? The deposit has mineralization of 1.5 percent copper, two or more times the grade of ore typically mined here. Or is it the nature of this deposit that is most amazing? The presence of this huge, high-grade hypogene deposit, underlying the Magma mine has implications for the other copper mines in the Southwest and has mining companies wondering what lies beneath *their* porphyry deposits.

The deposit, deeply buried under post-mineral rocks, was first intersected by drill holes from the underground workings of the Magma mine in 1995 by Magma Copper. In July 2001 Resolution Copper/Kennecott Exploration Company started a surface drill exploration program southeast the #9 shaft. Drilling recovered 10 miles of HQ core from 17 holes at a cost of \$500,000 per hole. Initially, drill rigs occupied four existing sites. Resolution Copper/Kennecott Exploration later developed a fifth site further to the east. Holes were initially drilled with a rotary rig to a depth of 3,000 feet. This was followed by drilling core holes another 3,000 to 4,000 feet. From each initial drill hole deflection holes were then drilled using wedges and a directional drill.

Before releasing reserve figures more drilling needs to be done to define the deposit's limits and copper content. The bottom of the deposit is not totally known, but is estimated to be generally about 2500 feet below sea level. ~~The deposit is reported from earlier work to be almost 6000 feet long, 5000 feet wide, and 650—1500 feet thick.~~ (we do not know this).

Three technical problems will need to be overcome to develop the mine: depth, heat, and rock stress. Mining at 6,500 feet means local rock temperatures of up to 170 degrees F. Rock stress at that depth is obviously going to be a concern. ~~Although no~~ No mining method has been selected. (we are evaluating several options). ~~the company believes block caving is a viable mining option.~~ Before these matters can be addressed Resolution Copper Company, Kennecott Exploration's successor in interest, must deal with surface multiple-use concerns, complete the regional ground water study being conducted by Montgomery and Associates, and continue gathering baseline and environmental data. ~~for the future EIS.~~

London-based Rio Tinto earned a 55 percent controlling interest in the property from BHP-Billiton by spending \$25 million on exploration. The resulting joint venture company, Resolution Copper Company, took over management of the project, which

includes the Superior underground mine concentrator, and smelter, on May 1 of this year. Initial exploration was completed in February of 2003. Resolution plans to continue evaluation for the next three years. They will also undertake two voluntary remediation projects at the existing mine site. Many of the Adits, tunnels, and other workings in Queen Creek from previous mining operations will be closed or gated to retain their function as habitats for bats, snakes and other wildlife. Also, stormwater retention capabilities on the West Plant Site near Superior ~~is~~ are being expanded. The existing tailings are being studied to see how they can be sealed. The company has set aside over \$2 million for these projects in 2004.

Development of the project could cost easily exceed \$1 billion, and although it is too soon for firm target dates, construction could begin sometime after 2010. The mine could generate nearly 1,000 construction jobs and 400 permanent, high-paying mine jobs. The deposit, once developed, would produce for an expected lifespan of 25 years.

Meanwhile, the company is working on solidifying community support for the project. Resolution holds open house festivities, awards scholarships, supports the Boyce Thompson Arboretum, participates in local mining competitions, and hosts ice cream socials. If and when the Resolution Copper mine becomes a reality, Resolution Copper Company and the town of Superior will be ready.

Text Box (Bruno has provided his concerns on this diagram)

Geology of the Resolution Deposit

The following excerpts are from various technical papers on the geology of the Resolution deposit. Citations are listed.

“The upper kilometer of the deposit, pervasively sericitized and with abundant pyrite and later bornite-chalcocite, is overprinted by advanced argillic alteration with kaolinite, dickite, and less alunite, topaz, pyrophyllite, and zunyite. The vein-controlled, high sulfidation assemblage pyrite + chalcocite correlates most strongly with advanced argillic alteration and copper grades greater than 10%. Deposits sharing features seen in the upper portions of the Magma porphyry (now the Resolution deposit. ed.) include some of the world’s largest copper deposits (e.g. Butte and Chuquicamata). The discovery of this style of porphyry ore in the southwestern US should serve as an incentive for renewed exploration efforts there.”

Sandra Troutman, Advanced argillic alteration in the deeply buried Magma Porphyry Cu-Mo prospect, Superior, Arizona, Abstract from SME Meeting, 2002

“Surface and underground drilling into the deposit has outlined a zone of >1.0 percent hypogene Cu that is at least 750m long by 250m wide by 300m high, elongated to the

east northeast. The same volume of rock also averages 0.02 percent Mo and 2 ppm Ag. The zone apexes approximately 300m below sea level, slight more than 1.5 km below the ground surface, and remains open in all directions laterally and at depth. Four of the last five drill holes penetrating this zone ended in rock assaying >2.0 percent Cu.”

Scott Manske and Alex Paul, Geology of a Major New Porphyry Copper Center in the Superior (Pioneer) District, Arizona, in Economic Geology, Vol. 97, March-April 2002.

~~“The Resolution deposit exhibits higher hypogene copper grades than most other porphyry copper deposits in the southwestern USA. Two factors apparently combined to generate the higher grades: 1) favorable host rocks, and 2) superimposition of a late stage of bornite-chalcocite mineralization on earlier chalcopyrite-pyrite mineralization.”~~

~~Geoff Ballantyne, Tim Marsh, Carl Hehnke, Dave Andrews, Amy Eichenlaub and Ken Krahulec, The Resolution Copper Deposit, A Deep, High-Grade Porphyry Copper Deposit in the Superior District, Arizona, Kennecott Exploration Company, 2003 (this is privileged internal data we prefer not be released).~~

Photo: the one everyone uses

Graphics: Cross section of deposit from Manske?

WHAT'S INSIDE

Tam O'Shanter Could Become State's First Official Rock Climbing Park

Land Exchange: Legislative Update

Resolution Copper Employees and Friends Hit the Arizona Trail in a Mix of Work and Fun

Sunnyslope High School Career Fair Helps Students Explore Career Options

Superior Students Get a Sneak Peek at Mars Exhibit, Interactive Labs at ASU

ADEQ Director Steve Owens, Staff Visit With Resolution Copper, Superior Residents

ISO 1400: 2004 EMS Update

U of A Students Visit Resolution Site, Get Education on Project, Future Opportunities

Resolution Project Evaluation Studies Advancing with Plans for Water Treatment Facility

Resolution Copper Focuses on Safety First

ADOT Encourages Driver Responsibility With an Antilittering Campaign

Rio Tinto, Resolution Copper Host Partnering Workshop

Resolution Copper Employees Featured Guest Speakers at Sunset Series, Hispanic Leadership Institute

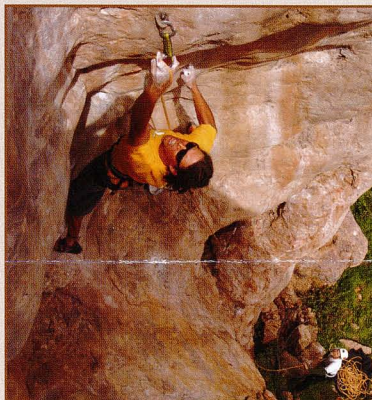
Resolution Copper Awards More Than \$42,000 in New Scholarship Funds

Resolution Copper Releases 2005 Sustainable Development Report

Did You Know? Fun Facts About Copper

"We have created an environment where we can work on our issues in a collaborative way with the climbing community and other stakeholders, and the result is the potential development of a new state park that will benefit all Arizonans," said John Rickus, President, Resolution Copper.

In early 2005, the Arizona State Parks Board lent its unanimous support to the development of Tam O'Shanter, and this year Sen. Jake Flake introduced legislation in the Arizona state senate to establish an official rock climbing state park. Bill supporters include Sens. Jack Brown, Rebecca Rios, and Reps. Cheryl Chase and Pete Rios.



Tam O'Shanter Peak boasts world-class climbing and is now on track to become Arizona's first state park dedicated to the sport. Tamo will be an economic boon for Kearny and the region and will rival the international fanfare of Kartchner Caverns. The park is the result of the several unique public-private partnerships, including Resolution Copper and Arizona State Parks.

The creation of the park also depends on the successful passage of a federal land exchange bill. If both measures pass, the Federal Bureau of Land Management will convey about 2,000 acres at Tam O'Shanter Peak to Arizona State Parks. Resolution Copper also will provide financial support to improve access to the new park, which will include rock climbing, bouldering, hiking and other activities.

Though Senate Bill 1550 is now moving through the Arizona Legislature, it will take about two years to complete the federal land exchange, and an additional two years before Tam O'Shanter will be open to the public. Before opening the site, Arizona State Parks will need to establish routes, place bolts and develop safety protocols and park amenities. An access road also needs to be developed. In the meanwhile, climbers will have continued opportunity to climb at Oak Flat with some restrictions.

TAM O'SHANTER COULD BECOME STATE'S FIRST OFFICIAL ROCK CLIMBING PARK

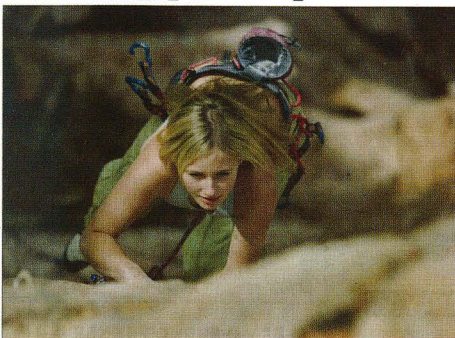
Efforts to develop Tam O'Shanter Peak into Arizona's first-ever rock climbing park are well under way thanks to the efforts of national and local climbers, as well as a number of private and public entities.

The idea to turn Tam O'Shanter Peak into a state park began with Resolution Copper's search to replace the popular Oak Flat recreation area, which mine operations will displace. In 2004, the company enlisted nationally renowned rock climbing expert John Sherman, who spent the better part of a year searching for and ultimately discovering the climbing utopia that is now referred to as

"Tamo." Sherman's find is also supported by several national and local climbing enthusiasts who have put the rock at Tamo to the test and believe it is unrivaled by anything they have ever climbed in North America.



Creating peak experience



Rock climber Sierra Blair-Coyne, 12, of Scottsdale, climbs a crag at the Tam O'Shanter site east of Kearny. "Tamo" is being considered as a state park but must scale state and federal hurdles. A bill to designate the area as a state park is being considered by the Legislature.

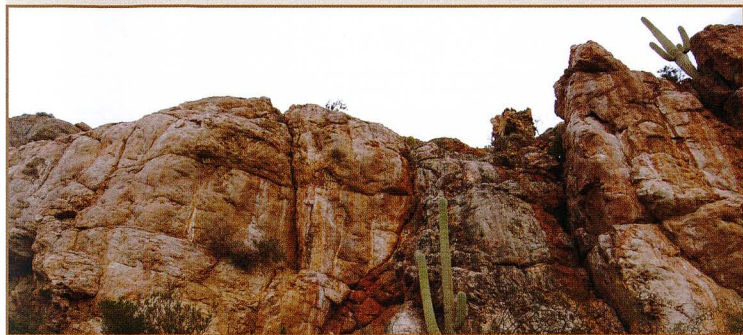
By Robbie Sherwood
The Arizona Republic
Echod shouts of "Go Tamo!" and "Nice climb!" can be heard from far below the quartzite crag. A minute later, a forum with ripples like a bridge cable emerges from below the cliff face and 30-year-old professional rock climber Tamo Fairfield pulls his otherwise

View a side show of climbers scaling rock walls at the park at news.azcentral.com.

near Tam O'Shanter Peak near Kearny, southeast of Phoenix, will likely become a world-class rock-climbing haven and a new state park with international marketing potential that rivals Kartchner Caverns near Benson. But for now, Fairfield is one of only a handful of hikers according to script, this spot be-

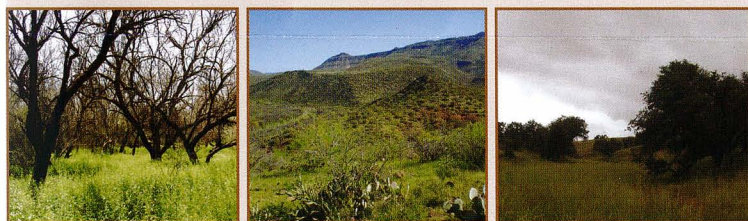
See PEAK Page B2

LAND EXCHANGE: LEGISLATIVE UPDATE



Senate Bill 2466 now includes land that could create the first state park dedicated to rock climbing.

In May 2005 Sen. Jon Kyl and Rep. Rick Renzi introduced the *Southeast Arizona Land Exchange and Conservation Act of 2005* in Congress to support a land exchange between the United States and Resolution Copper. In March, Sen. Kyl introduced a modified version of the bill to include an additional 800 acres that could become Arizona's first state park dedicated to rock climbing at Tam O'Shanter.



The Southeast Arizona Land Exchange and Conservation Act of 2005 includes eight parcels totaling more than 5,500 acres, each with distinct environmental values. Pictured (from left): the spectacular Seven B Ranch, Cave Creek, and Appleton-Whittell Research Ranch parcels.

"This modified bill is a culmination of months of negotiation with members of the rock-climbing community, local and state stakeholders, and other interested parties," Sen. Kyl said in a recent statement. The bill, cosponsored by Sen. John McCain, also enjoys support from Gov. Janet Napolitano, the Arizona delegation and several environmental organizations.

Senate Bill 2466 is now scheduled for a committee hearing and it is anticipated that the final bill will reach the president for signature by the end of the year.

RESOLUTION COPPER EMPLOYEES, FRIENDS HIT THE ARIZONA TRAIL IN A MIX OF WORK AND FUN

On Friday, January 27, more than 40 Resolution Copper employees and several friends of the company donated their time to help construct a one-mile segment of the Arizona Trail south of the Picketpost Trailhead in Superior. The work event is part of the company's five-year commitment to support building and maintaining an important 25-mile section of the Arizona Trail. The daylong event included a safety briefing, overview of trail-building activities and a catered lunch at the trailhead by Superior's own Café Piedra Roja. Employees spent the day working in teams led by trail volunteers that included staff from the Globe Ranger District and the Arizona Trail Association (ATA). The event was a tremendous success, and employees and ATA staff are looking forward to hosting a similar event next year.

"Through outreach activities and other vehicles, we support active citizenship and community involvement on the part of employees," said John Rickus, President, Resolution Copper. "The Arizona Trail is just one of many efforts to encourage employees to make a difference in Superior and surrounding communities."

"I want to thank Resolution Copper and their wonderful crew of energetic and extremely productive volunteers for the contribution to the building of the part of the

"I would like to extend the Tonto National Forest's sincere appreciation for the participation by Resolution Copper employees and their families. We at the Globe Ranger District truly appreciate the partnership we have with Resolution Copper and look forward to working with you all again for improving the recreation experience for the public and generations to come. Excellent trail work, teamwork and partnering. Hats off to you all for a job well done!"

Connie D. Lane

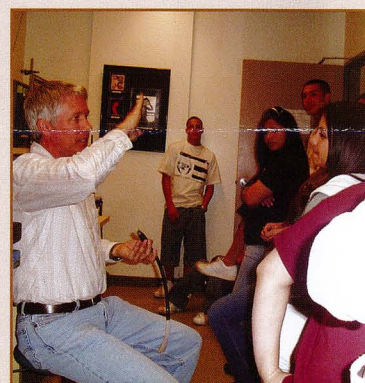
Recreation/Lands/Minerals Staff
Globe Ranger District

Arizona Trail at Picketpost," said Merle Palmer, ATA volunteer. "I was surprised at how much got done, and certainly appreciate the high quality of the trail that was built. It was a pleasure to be able to work with everybody."

Copper's Dick Stilgenbauer, Jennifer Russo and Alma Suarez collaborated with the University of Arizona on two sessions for students interested in pursuing a career in engineering.

"These events are a win-win for both the students and future employers," said Stilgenbauer, Resolution Copper human resources manager. "Career fairs are a great way for students to gather information and insight about their interest areas and a good opportunity for them to speak to professionals about what they should be doing now to position themselves for future success."

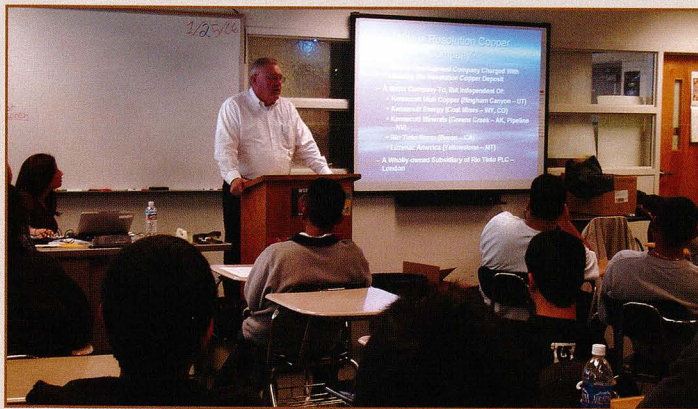
SUPERIOR STUDENTS GET A SNEAK PEEK AT MARS EXHIBIT, INTERACTIVE LABS ON THEIR VISIT TO ARIZONA STATE UNIVERSITY



More than 40 Superior Junior/Senior High School students visited Arizona State University's main campus Thursday, February 23, for a walking tour of the campus, visits to the Mars Exploration Facility and four science labs in the Goldwater Material Science building – all courtesy of the Arizona State University Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET) and Resolution Copper.

Before checking out the exhibits and labs, students enjoyed a lunch provided by Resolution Copper at the university's Memorial Union, where they talked to undergraduate students and got answers to their most pressing questions about college life. Students then viewed a short film on the NASA/Arizona State University Mars partnership before visiting the Goldwater Material Science building for several interactive labs.

SUNNYSLOPE HIGH SCHOOL CAREER FAIR HELPS STUDENTS EXPLORE CAREER OPTIONS



Resolution Copper's Human Resources Manager, Dick Stilgenbauer speaks to Sunnyslope High School students about job requirements and tips for a successful career in a high-tech mining operation.

On January 26, Resolution Copper personnel participated in the Sunnyslope High School Career Extravaganza in Phoenix. The daylong career fair included presentations from a variety of sectors and focused on a spectrum of careers, military opportunities and vocational/technical disciplines. Students benefited from professional presentations about the various fields, educational requirements and training, general industry information and genuine advice from professional experts. Resolution



More than 40 Superior Junior/Senior High School students got a taste of campus life at Arizona State University, including interactive labs and lunch with undergraduate students, as part of a visit sponsored by Arizona State University Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET) and Resolution Copper.

Lab highlights included optical and scanning electron microscopy, vacuum and air pressure demos, ion beam facility with a Van de Graaff generator and a wonderful world of atoms and materials modeling.

"It was great to learn that so many of the Superior students are already planning to attend college and that many of them are thinking about science and technical careers," said Kristine Wilcox, Assistant Director of CRESMET. "Seeing how math and science courses in high school translate into interesting, well-paid jobs really motivates students, and the way Resolution Copper demonstrates that is a wonderful benefit of our partnership."

CRESMET and Resolution Copper have been working with Superior Unified School District on several initiatives to encourage student interest and participation in math

and science, including preparing junior and senior high school students for the annual CARSEF Science Fair.

MARK YOUR CALENDARS FOR THE FIRST ANNUAL SUPERIOR SCIENCE EXPO!

June 1, 2006

5:30 pm - 7:00 pm

Superior Junior & Senior High School

Desserts provided by Felicia's Ice Cream Shop

For the past several months, Superior Junior/Senior High School students in grades 6 through 9 have been creating serious science projects, researching various subjects, and having some genuine fun along the way. This work has been done under the direction of Arizona State University's CARSEF program instructors and Resolution Copper mentors. The Superior Science Expo is an opportunity for students to display their projects to the community.

Free ice cream and cookies will be provided by Felicia's Ice Cream Shop.

Proud sponsors of the Science Expo include Arizona State University CARSEF, Superior Junior/Senior High School and Resolution Copper. For more information, contact Alma Suarez at Alma.Suarez@resolutioncopper.com.

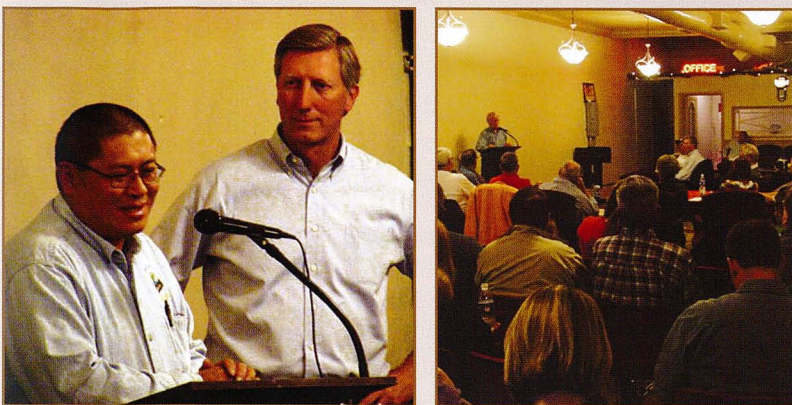
ADEQ DIRECTOR STEVE OWENS, STAFF VISIT WITH RESOLUTION COPPER, SUPERIOR RESIDENTS

In January several staff members from the Arizona Department of Environmental Quality (ADEQ) visited Resolution Copper's Superior operations. The visit included a project briefing and tour of Resolution's voluntary cleanup and redevelopment work at the Superior site. Company department officials also discussed opportunities for continuous improvement to support community and mine development.

"The students and I from Superior High School would like to thank Resolution Copper for setting up our visit to Arizona State University campus. The students were impressed with all aspects of the visit, the tour guides were outstanding, the Mars lab was interesting – it has sparked some good conversations in our science classes. Again thank you for your support in setting up this visitation."

-Dave Pastor

Superior Junior/Senior High School
Principal



Superior Mayor Michael Hing (left) introduces ADEQ Director Steve Owens, who briefed Superior residents on ADEQ activities during an evening dinner sponsored by Superior's Mayor Michael Hing and the Superior Town Council. Also on hand to update the community on the Resolution Project was Resolution Copper President, John Rickus (right).

Superior Mayor Michael Hing also hosted a special dinner for ADEQ Director Steve Owens. The dinner was an opportunity for Mr. Owens and his staff to update residents on several important local and statewide issues. Both Mr. Owens and his staff also pledged their department's continued outreach and assistance to the community. The evening was also an opportunity for interaction with community residents, local landowners, Resolution Copper community committee members and company employees.

RESOLUTION COPPER
ISO 14001:2005 PROJECT
 ACHIEVING THE STANDARD IN ECO-EXCELLENCE

ISO 14001: 2004 EMS UPDATE

During January and February, Resolution Copper employees continued work on Resolution Copper's ISO 14001:2004 Environmental Management System (EMS). Areas of focus included:

- Identifying the array of environmental Standard Operating Procedures (SOPs) that must be documented to help all Resolution Copper employees and select contractors understand the actions to take when their job-related tasks affect the environment. These SOPs will address how Resolution Copper functions to ensure compliance with ISO 14001 standards in the areas of air, land, water and waste-related operations.

- Determining Resolution Copper's Environmental Aspects (EAs), those Resolution Copper activities that affect the environment either positively or negatively. The list of EAs will then be rated to determine which aspects are significant. These Significant Environmental Aspects (SEAs) will drive Resolution Copper's objectives and targets for ISO-related environmental performance.
- Further refining Resolution Copper's ISO 14001 training approach and related materials to ensure that all Resolution Copper employees and select contractors remain ISO aware and compliant in the performance of their job duties.
- Determining the makeup of the Resolution Copper internal audit team, which will comprise both Resolution Copper employees and select contractors. This team will be educated on all aspects of the ISO 14001:2004 standard and will know what to look for to regularly verify that Resolution Copper's EMS meets the ISO compliance test.

Due to the range of work still to be completed on Resolution Copper's EMS, and the wide variety of other fast-track projects under way at Resolution Copper, we have revised our target date for ISO registration from the first quarter to the third quarter of 2006. We will continue to provide progress updates to our stakeholders as we move toward this critical quality management milestone.

UNIVERSITY OF ARIZONA STUDENTS VISIT RESOLUTION SITE, GET EDUCATION ON PROJECT, FUTURE OPPORTUNITIES

On Saturday, April 29, more than 35 students and faculty from the University of Arizona's Department of Mining and Geological Engineering were treated to a daylong visit to the Resolution Project that included presentations from senior management and a site tour. The visit was an opportunity for students to gain an appreciation and understanding of what is involved in developing this dynamic project. Highlights included a project overview from company president, John Rickus, geological and geotechnical presentations, insights into the company's safety culture and focus on

environmental and community considerations. Also on hand was human resources manager, Dick Stilgenbauer, who spoke about the job outlook for the industry and specific career opportunities at Resolution.



Company president, John Rickus, speaks with nearly 40 students and faculty from the University of Arizona's Department of Mining and Geological Engineering about the technicalities of the Resolution Project.

Participants enjoyed a special brown bag lunch courtesy of Superior proprietor Lynn Heglie of Café Piedra Roja. The group then visited the mine site where students reviewed core, learned about the company's drilling program and gained valuable insight into the extensive planning processes for mine development. The afternoon also afforded students an opportunity to interact with key staff members. The visit concluded with a tour of the voluntary reclamation work undertaken by Resolution at the Superior site.

RESOLUTION PROJECT EVALUATION STUDIES ADVANCING WITH PLANS FOR WATER TREATMENT FACILITY

The next phase of Resolution's pre-feasibility work includes plans for pumping water out of the old mine. The water must be removed before any underground development can begin. The pumping process will take about two years, since the mine contains nearly two million gallons of water.

Near-term plans include construction of a water pumping and treatment system to pump out the mine, cleanse the water and discharge it to Queen Creek. We have already

begun this process by applying for various operating permits and meeting with state regulators. We have also kept our Superior environmental subcommittee up-to-date. After regulators review and approve our plan, the facility is expected to come online in January.

"This is an essential step in our efforts to develop the Resolution orebody," said Bill Williams, Vice President of Health, Safety and Environment and Construction, Resolution Copper. "Up to 150 contractors and engineers will be employed to build the facility, and following construction, the plant will require a full-time operator and part-time maintainers."

More information about the Resolution Project is available on our website at resolutioncopper.com.

RESOLUTION COPPER FOCUSES ON SAFETY FIRST

Safety is a top priority at Resolution Copper, and the company is investing significant resources to ensure all employees and contractors are properly trained across a number of disciplines. This includes emergency response, CPR, first aid and driver safety.

In January, more than 60 Resolution Copper employees and contractors took part in the National Traffic Safety Institute Safer Driving Program. Objectives include assessing driving-related behaviors, applying a risk assessment process and developing individual action plans for safer driving. The training will be ongoing as the Resolution Copper employee and contractor base grows.



Resolution Copper employees, including management, supervisory personnel, frontline staff and contractors, also completed an intensive modern safety management program led by worldwide consultant group Det Norske Veritas. The program, which focused on safety, health and

environmental risk management, offered participants tools and tips for proactive safety management and an effective safety culture.

ADOT ENCOURAGES DRIVER RESPONSIBILITY WITH AN ANTILITTERING CAMPAIGN



A new antilitter informational flier will soon arrive with driver's license materials from the Motor Vehicle Division of the Arizona Department of Transportation (ADOT) with help from the Arizona Diamondbacks.

The flier recognizes Arizona citizens and sponsors who "pitch in" to remove trash and debris through ADOT's Adopt a Highway program, and encourages Arizona drivers to "pitch out" their trash in the trash can, not on the roadside.

The D-Backs are excited about going to bat for Adopt a Highway. Team officials say they will help promote the Pitch In, Pitch Out message to the community.

"The Diamondbacks are proud to partner with ADOT and support the Pitch In, Pitch Out message," said Diamondbacks president, Rich Dozer. "Arizona is such a beautiful state, and we all need to do our part to keep it that way."

"We share our volunteers' and our citizens' concerns about litter," says ADOT director, Victor Mendez. "Its impact is innumerable – from aesthetics, quality of life and safety to economic development and tourism. Littering shows others that we don't care. Well, we do care, and I'm delighted to be working with the Diamondbacks organization to deliver this antilitter message." Inserts will start appearing in MVD driver's license registration material in the spring.

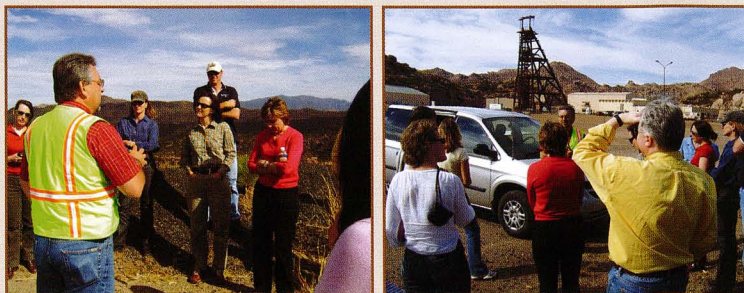
The Adopt a Highway Volunteer program is a national litter-awareness program in which groups volunteer to pick up litter from freeways and highways. Each year more than 1,000 groups participate in removing litter from Arizona's highways, saving approximately \$1.8 million in taxpayer money.

Arizona's program started in 1988 with approximately 120 groups. By 1991, all available mileage was adopted in the metropolitan areas. By fall of 1995, more than 1,300 groups had adopted more than 2,300 miles of Arizona's highways. In 2006, there are more than 2,200 groups. Groups include civic and community groups, business organizations and even families.

Contact the Globe District Office at (928) 402-5608 to become involved with the Adopt a Highway Volunteer program. The office will give you information on what ADOT provides volunteers, what volunteers must provide and safety requirements. You'll also receive a permit form to complete and submit to the district office. Be sure to retain a copy of the form for your records.

RIO TINTO, RESOLUTION COPPER HOST PARTNERING WORKSHOP

On February 15, more than 50 people met in Phoenix for a two-day workshop to explore partnerships and other external relationships contributing to Rio Tinto's sustainable development efforts. The group included individuals from Rio Tinto corporate headquarters and various business units, as well as representatives from national and local non-governmental organizations. Representative organizations included The Nature Conservancy, Arizona Trail Association, Birdlife International, Conservation International, Arizona State University CRESMET, Earthwatch Institute Europe, and Sonoran Institute. Workshop highlights included a tour of the Resolution Project, café discussions about the successes and challenges of partnering, best practice presentations and a special dinner featuring Claire Thomas, Director of Public Outreach, Freedom from Hunger.



Bill Williams, Vice President of Health, Safety and Environment and Construction, Resolution Copper, briefs Rio Tinto and Resolution Copper partners on project developments in Superior.

The concepts and experiences shared made for a productive and rewarding workshop. Rio Tinto and Resolution Copper would like to particularly thank the external participants, many of whom traveled from a great distance to participate in the workshop.

RESOLUTION COPPER EMPLOYEES FEATURED GUEST SPEAKERS AT SUNSET SERIES, HISPANIC LEADERSHIP INSTITUTE

Resolution Copper employees were the invited guest speakers at several chambers of commerce and special events in the past several months, including the Hispanic Leadership Institute and the Apache Junction Chamber of Commerce. Company personnel spoke about what it takes to build a mine of the 21st century and Resolution's commitment to economic, social and environmental well-being.



Pictured (left to right) are Rayna Palmer, CEO of the Apache Junction Chamber of Commerce, Jennifer Russo, Corporate Communications Director with Resolution Copper, and Alma Suarez, Community Relations Coordinator with Resolution Copper.

On March 9, more than 25 students enrolled in the Hispanic Leadership Institute-Pinal program and received a personal briefing on the Resolution Project. Resolution Copper consultant Yazmin Venegas visited the students, many of whom are business and community leaders, at the Central Arizona College (CAC) Coolidge campus to discuss the Resolution Project concept, development and the company's proactive approach to environmental and social issues. Founded in 2005 as a partnership between Valle del Sol, the Latino Familia Initiative and CAC, HLI-Pinal is a 10-week program that offers program participants both an opportunity to engage with Arizona's

foremost business and political authorities as well as a unique insight into the role of culture in various circumstances, with a specific focus on the Latinos in Arizona.

In February, Resolution Copper expanded its support for Arizona's chambers through membership in the Apache Junction Chamber of Commerce. Resolution Copper employees were invited guest speakers at the Chamber's Sunset Series held March 9 at the Best Western Gold Canyon. More than 80 Chamber members, business owners and community leaders were present for an enjoyable evening of networking. In addition to Resolution Copper, guests heard from city, county and state representatives about the plans for future growth and development in Pinal County.

RESOLUTION COPPER AWARDS MORE THAN \$42,000 IN NEW SCHOLARSHIP FUNDS


The Resolution Copper Scholarship Program winners for the 2005-06 academic year have been announced with more than \$42,000 awarded to seven graduating high school seniors from Superior, Miami, Globe, Florence, Apache Junction and the Hayden-Winkelman and Kearny area.

The 2006 recipients are: Carmen Micaela Preciado and Joe M. Bribiescas from Superior Junior/Senior High School, Josh Stiles of Miami High School, Leilah Krohn of Apache Junction High School, Kieren Smyers of Globe High School, Brendae Taylor from Florence High School and Marissa Muñoz from the Hayden-Winkelman and Kearny region. A scholarship committee comprised of school faculty selected the recipients. Scholarship winners will



Resolution Copper's Alma Suarez presents a special plaque at the Apache Junction High School awards banquet.

Attention Superior High School Seniors



YOU MAY BE ELIGIBLE TO RECEIVE UP TO \$6,000 TOWARD FURTHERING YOUR EDUCATION THROUGH THE RESOLUTION COPPER SCHOLARSHIP PROGRAM.*

The Resolution Copper Scholarship Program is open to outstanding diverse students interested in furthering their education at an Arizona university, community college, business or trade school. Plus, Resolution Copper Scholarship winners are eligible to participate in the company's Summer Internship Program and gain valuable work experience. Preference will be given to candidates who demonstrate a commitment to business, engineering or science.


TWO SCHOLARSHIPS VALUED AT \$1,500 EACH WILL BE GRANTED TO GRADUATING SUPERIOR HIGH SCHOOL SENIORS.

Guidelines and applications are available now at your high school main office. Applications must be submitted to your high school guidance counselor by March 22, 2006.

Apply now for a scholarship opportunity for 2006-2007!

*Maximum grant is \$1,500 per school year (\$750 per semester). Scholarship will be subsequently reviewed upon evidence that the student is meeting the necessary eligibility criteria.

Looking for more information? Visit www.resolutioncopper.com/community/scholarships.asp

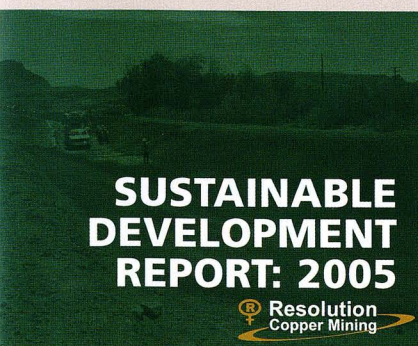


be recognized with a formal plaque at their respective high school scholarship award ceremonies.

"I'm delighted by the sustained growth of the Resolution Copper Scholarship Program during the last five years," said John Rickus, President, Resolution Copper. "Support for education and the development of a qualified workforce are at the core of our business, and we wish these students continue to succeed in their academic endeavors."

Since 2002, the Resolution Copper Scholarship Program has awarded more than \$143,000 in scholarships to students interested in continuing their education at an Arizona university, community college, business or trade school. Resolution Copper Scholarship recipients are also eligible to participate in the company's summer internship program and gain valuable work experience. Applications for the 2007 scholarship program will be made available in February. More information about the scholarship program is available online at: www.resolutioncopper.com/community/scholarships.

RESOLUTION COPPER RELEASES 2005 SUSTAINABLE DEVELOPMENT REPORT



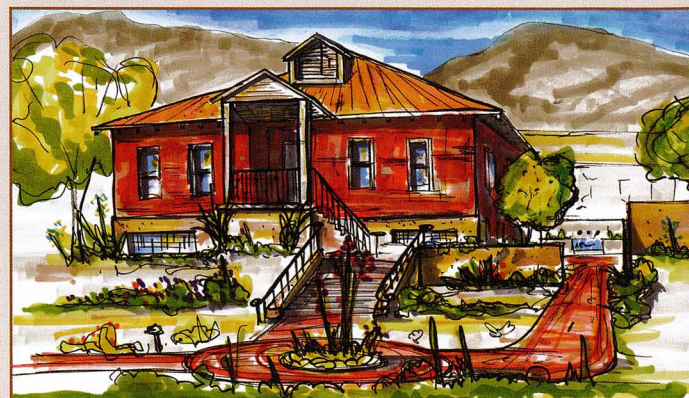
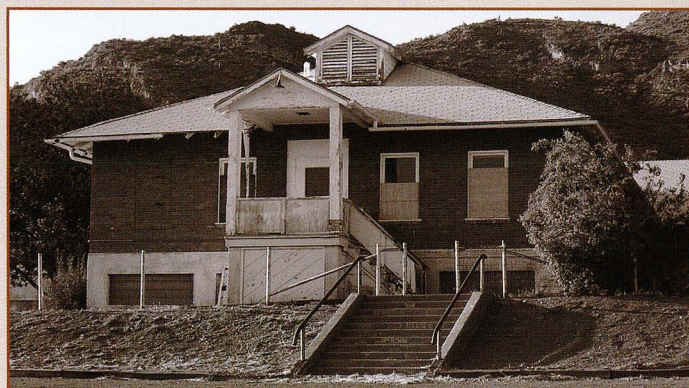
Resolution Copper has gone online with its 2005 Sustainable Development Report. The report is a summary of progress and project highlights. This year's review focuses on safety, health, environment and community partnerships.

The report is available to download in the Media Section of the company's website at resolutioncopper.com. A hard copy can be obtained via email request to info@resolutioncopper.com.

RESOLUTION COPPER SEEKS YOUR STORIES OF THE MAGMA HOSPITAL!

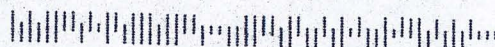
Resolution Copper is renovating the former Magma Hospital in Superior, turning the historic building into its company headquarters. The facility, which will be renamed the Verde Building, will represent the company's commitment to environmental sustainability, preserve the rich history of the area and serve as a symbol of things to come.

The building will feature a community room, open to the public, with a variety of displays, including one about the Magma Hospital. To help create this display, we are looking for personal stories about your experiences with the hospital. If you or anyone you know was born or treated at the Magma Hospital or has any type of relevant memory to share, please contact Alma Suarez at (602) 540-7299.



The Magma Hospital circa 1930 (above) and a rendering of the future Verde Building renovation.

Ms. Diane Bain
Or Current Occupant
1502 W WASHINGTON ST
PHOENIX AZ 85007-3210



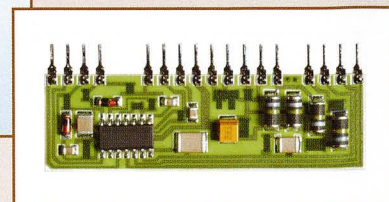
DID YOU KNOW? FUN FACTS ABOUT COPPER

Copper is biostatic, meaning bacteria will not grow on its surface. For this reason, copper and copper alloy doorknobs protect against the transfer of disease, particularly in hospitals.

Sterling silver is transformed into usable tableware by mixing in 7.5 percent copper with 92.5 percent silver to make the metal hard and sturdy.

IBM and other technology giants are replacing aluminum with copper in the computer chips they manufacture because of copper's superior electrical conductivity.

Average uses of copper in motorized farm vehicles is 63 pounds. Construction vehicles use an average of 66 pounds. The big user is an electric forklift truck at about 138 pounds.



WHAT'S INSIDE

RCC Hosts Community Open House for Superior Residents

Potential New Climbing Area, Addition of Environmentally Sensitive Lands Key Provisions of Land Exchange Bill

RCC Continues With Pre-Feasibility Work, Adds Team Members

Environmental Update: Mine Site Rehabilitation

ISO 14001 – Update

Magma Hospital Renovation Underway: Building to Become Resolution Copper's Corporate Headquarters

Audubon Arizona, Resolution Copper Recipients of Grant to Expand State's Important Bird Area Program

Resolution Copper Completes Statewide Poll, Finds Strong Support for Resolution Project

Have Rocks, Will Travel: Superior Schoolchildren Enjoy Hands-On Classroom Program

RCC, ASU and Superior Schools Partner on Math and Science Initiatives

Superior Schools, AFRE and Resolution Copper Partner on Education Workshops

Interpretive Sign Project to Recognize Past, Future of Superior

Safety First: Focus on Work Zone Safety

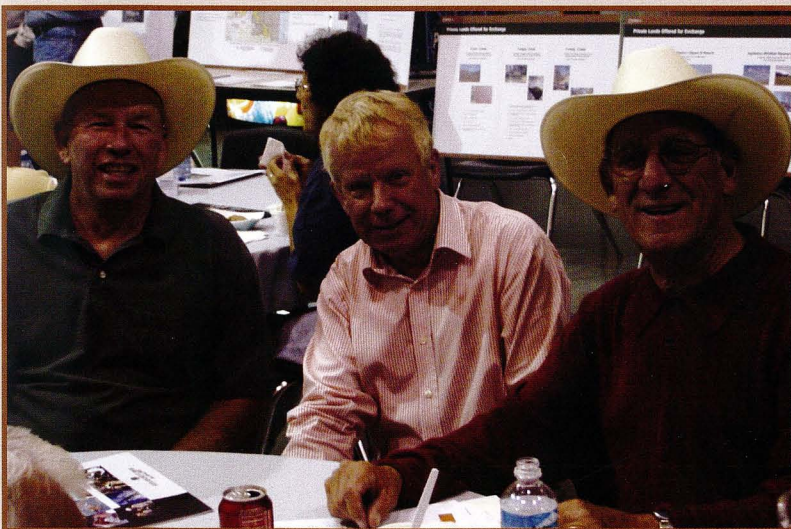
Resolution Copper's Bill Williams Joins Statewide Technical Working Group on Climate Change

Copper Corridor Ore Cart Trail Moving Full Steam Ahead; Resolution Copper Donates First Ore Cart

Reflections From Resolution Copper Intern Erica Diaz-Gonzalez

RCC HOSTS COMMUNITY OPEN HOUSE FOR SUPERIOR RESIDENTS

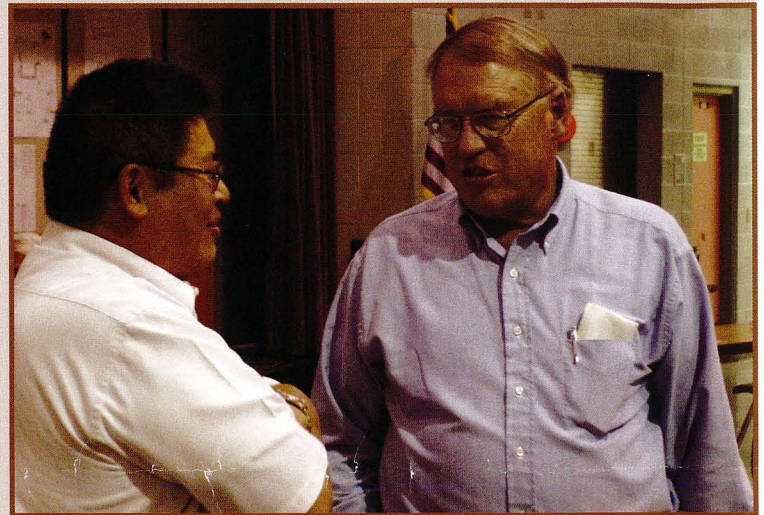
On November 8, more than 150 Superiorites attended a community open house at Superior Junior/Senior High School sponsored by Resolution Copper Company. The event was an opportunity for community stakeholders, local business owners and community leaders to learn more about the project and its impacts, including job creation, environmental initiatives and the company's community relations programs. It was also a chance for residents to ask questions and share ideas with company staff.



John Rickus, president of Resolution Copper, mingles with Superior residents during a November community open house.

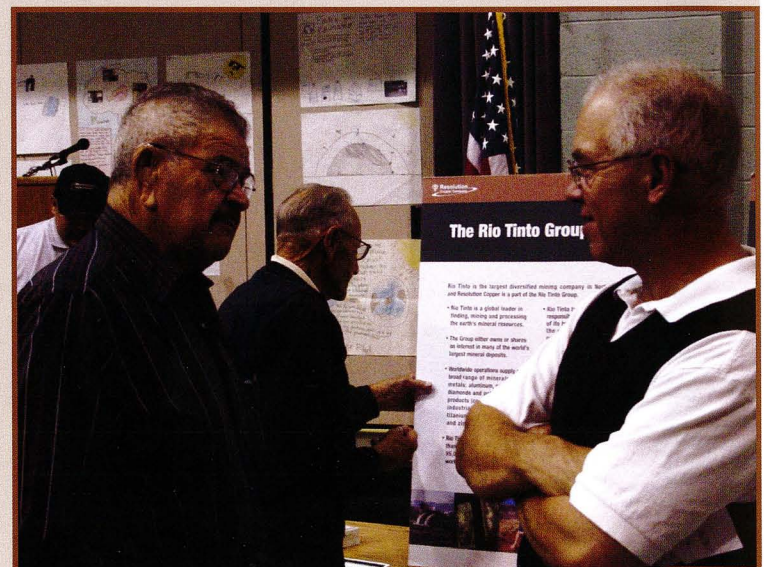
Representatives from the Arizona Department of Commerce (ADOC) discussed various programs they offer to support initiatives, including

economic development, job training and main street development. Plans call for future meetings between Town leaders, RCC staff, local residents and ADOC to move Superior's economy forward. Several state legislators and key committee staff were on hand to show their support for the community and the company. In attendance were Brent Brown from Governor Janet Napolitano's office; Teresa Martinez and Andy Jacobs, representing Congressman Rick Renzi and Senator Jon Kyl, respectively; Representative Pete Rios, Senator Rebecca Rios, Superior Mayor Michael Hing and the majority of the Superior Town Council.



Superior Mayor Michael Hing and Brent Brown of Governor Napolitano's office discuss happenings in the Town of Superior.

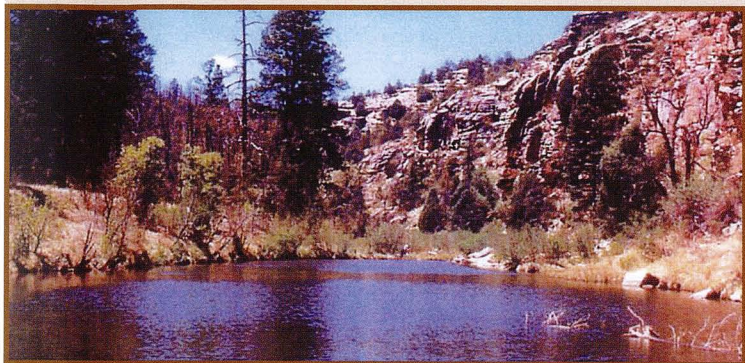
Resolution Copper has hosted several open houses at both the Superior Junior/Senior High School and RCC facilities since becoming manager of the Resolution Project in 2004. Plans call for future forums of a similar nature to inform residents on project developments and seek their feedback on important issues.



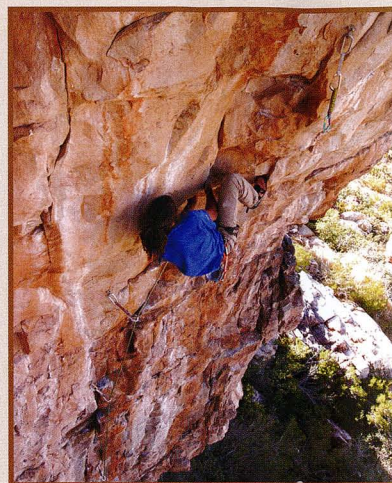
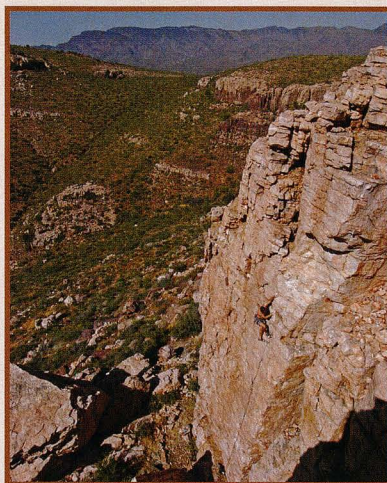
Bruno Hegner, vice president and general manager of Resolution Copper, catches up with longtime Superior resident and former miner Frank Florez.

POTENTIAL NEW CLIMBING AREA, ADDITION OF ENVIRONMENTALLY SENSITIVE LANDS KEY PROVISIONS OF LAND EXCHANGE BILL

effits, including an expansion of the Town of Superior's land base. It is our hope that the bill will be considered in Congress during the 2006 session.

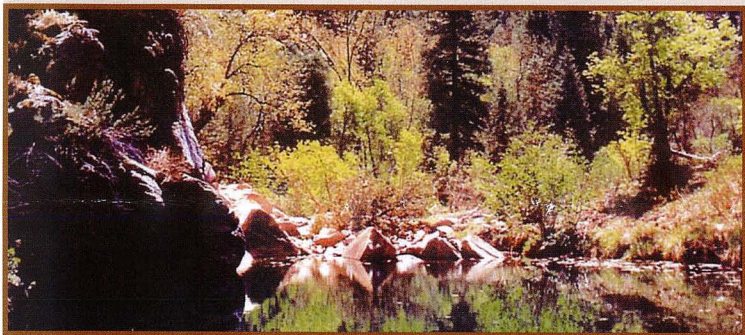


East Clear Creek offers a suitable habitat for a variety of wildlife and federally threatened endangered, proposed and sensitive species.

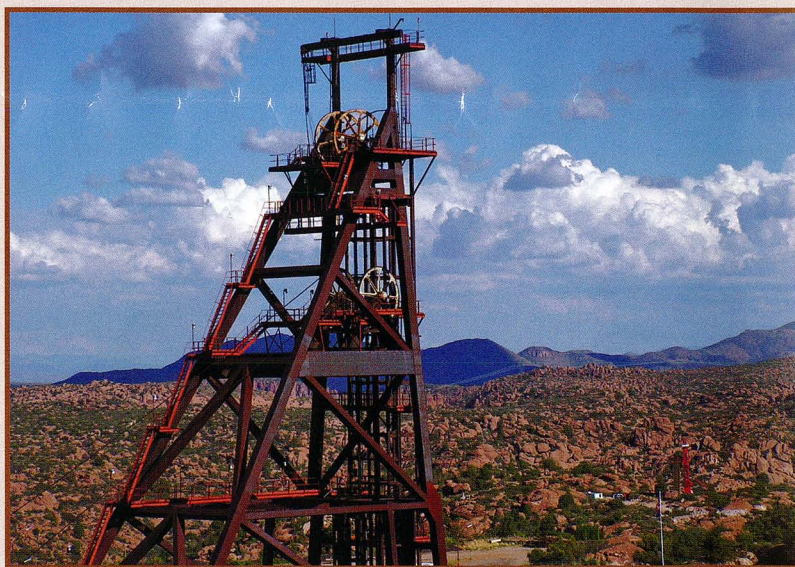


Photos from Tam O'Shanter, the proposed new state park that would be devoted to rock climbing

RCC CONTINUES WITH PRE-FEASIBILITY WORK, ADDS TEAM MEMBERS



Dripping Springs is integral to the rock climbing resource at Tam O'Shanter Mountain.



Resolution Copper continues to move forward with pre-feasibility work, including ongoing geological investigations of the Resolution Project at the #9 site. The company has hired several people from Superior and surrounding communities to support this effort.

The *Southeast Arizona Land and Conservation Act of 2005*, introduced in May 2005 by Senator Jon Kyl and Congressman Rick Renzi, enjoys support from a range of stakeholders. Since bill introduction, several congressional and committee staff have toured the Resolution Project and the exchange properties. This includes the addition of two new parcels, Dripping Springs and East Clear Creek. The 640-acre East Clear Creek parcel includes acquisition of more than two linear miles of East Clear Creek near the Mogollon Rim and contains abundant and diverse resource values, including extensive riparian and aquatic ecosystems.

Several discussions have centered on the development of what could become the first state climbing park in the country. Tam O'Shanter, located along the Dripping Springs Mountains, 20 miles southeast of the Oak Flat climbing area, has strong support from national, regional and Arizona climbers. In May of this year, the Arizona State Parks Board voted unanimously to work toward making this vision a reality. Tamo represents a prime recreational opportunity and will be an economic boom for the region.

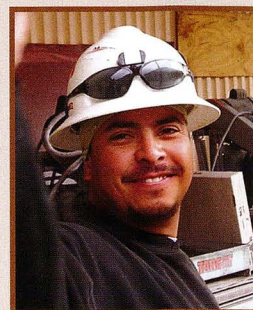
The *Southeast Arizona Land and Conservation Act of 2005* was assembled through thoughtful consultation with key environmental and community stakeholders. The exchange will deliver significant conservation and economic ben-



Michael San Miguel



Carlos Miramon



Rudy Jimenez

New team members include Superior residents Michael San Miguel and Rudy Jimenez, as well as Superior native Carlos Miramon. Also new to the team is Miami resident Stephen Cox. Each of these men has extensive industry experience, an impressive background and strong skills that are vital to the success of the geological phase of this program.

ENVIRONMENTAL UPDATE: MINE SITE REHABILITATION

The company continues to progress on reclamation activities at the West



Resolution Copper's environmental steering committee is helping advise the company on important issues, including site redevelopment.

Plant Site program, with a primary focus on storm runoff control work on the upper basin above the Superior offices. Before construction could begin, some older buildings had to be demolished and properly disposed. We engaged a salvage contractor to recycle the eligible demolition material.

In early July, we began the removal of old waste piles and mining structures. This effort is steadily progressing thanks to the hard work of several local contractors, including Albo Guzman Trucking and Dalmolin Excavating. This dirt will become part of the cover cap for tailings, thus supporting the company's philosophy of converting "waste" to usable material.

Work around the former mill site continues, and the company is evaluating opportunities for planting Arizona-native plants on the slope. The effort to identify potential species and a planting technique is being led by Casey McKeon, environmental advisor for Resolution Copper, and supported by staff from the University of Arizona's National Science Foundation through the corporate university partnership. If the work goes according to plan, new vegetation should appear on the West Plant Site in early 2006. The company is also starting construction on a water treatment plant.

Resolution Copper has also established a special steering committee of employees and Superior residents to advise the company on important issues related to reclamation and reuse of the West Plant Site and other key environmental issues. The group has held a number of discussions on site cleanup, historic structures, hospital renovation, ISO registration and future land use possibilities. Resolution Copper will use this feedback to plan site redevelopment and ensure it is properly addressing the community's concerns.

To support these efforts, Resolution Copper continues to add staff. The company is recruiting in several areas, including positions in engineering, safety, environment and occupational health. The newest additions to the team are James Almaas, Bill White, Ian Edger and Christy Osborn.

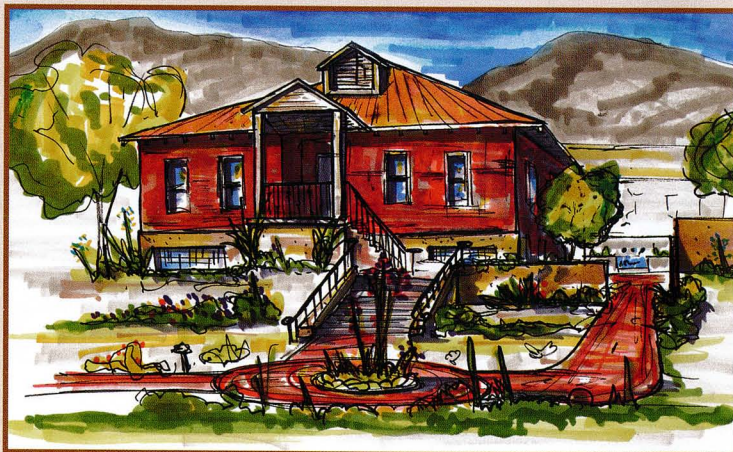
ISO 14001 – UPDATE



RESOLUTION COPPER
ISO 14001:2005 PROJECT
ACHIEVING THE STANDARD IN ECO-EXCELLENCE

Resolution Copper has made progress toward completion of its Environmental Management System (EMS) manual as part of the company's goal to become ISO 14001 registered by the first quarter of 2006. In August, company employees took part in a training session on the manual and accompanying procedures. These trainings, along with internal and external communications, will remain a primary focus of the ISO process as part of Resolution Copper's commitment to continuous improvement of its environmental performance. Resolution Copper management and staff agree that the ISO registration process is off to a great start and that it will translate into many tangible benefits for both the company and the community.

MAGMA HOSPITAL RENOVATION UNDERWAY: BUILDING TO BECOME RESOLUTION COPPER'S CORPORATE HEADQUARTERS



A rendering of Resolution Copper's new corporate headquarters, the Verde Building will be a sustainable workplace honoring the rich history of the Magma Hospital and the mining region.

Resolution Copper has undertaken an extensive remodeling project at the former Magma Hospital building. The company is converting the hospital into its new corporate headquarters and will invest several million dollars in interior and exterior renovations. The building's anticipated completion date is spring 2006. The new facility, renamed the Verde Building, supports Resolution Copper's goals of developing a 21st century mining operation that encourages innovation and sustainability. The building will embrace sustainable design and honor the Town of Superior's historical significance and cultural heritage. Resolution Copper is encouraging and supporting environmental responsibility by renovating the building to meet or exceed green building

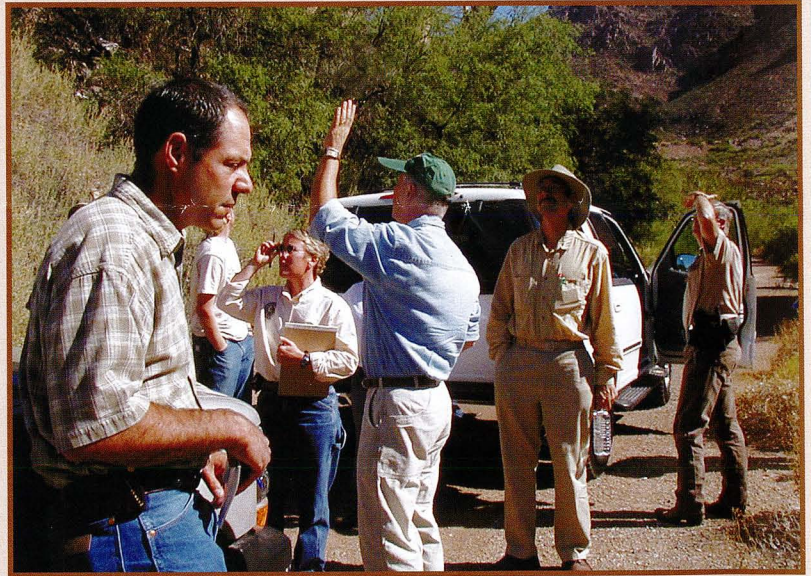
standards. Resolution Copper is the first mining operation in Arizona to seek green building certification.

The Verde Building design team is comprised of environmentally sensitive architects and engineers, including several US Green Building Council (USGBC) LEED® accredited professionals. Many team members specialize in reuse, renovation and historic preservation. Through a combination of sustainable design, vision and skills, the Verde Building will be a tribute to the past as well as a sign of optimism for the future.

AUDUBON ARIZONA, RESOLUTION COPPER RECIPIENTS OF GRANT TO EXPAND STATE'S IMPORTANT BIRD AREA PROGRAM

Resolution Copper and Audubon Arizona have been selected as Rio Tinto Partnership Action Fund grant recipients. This grant will help both organizations realize their mission of supporting conservation efforts and protecting bird species.

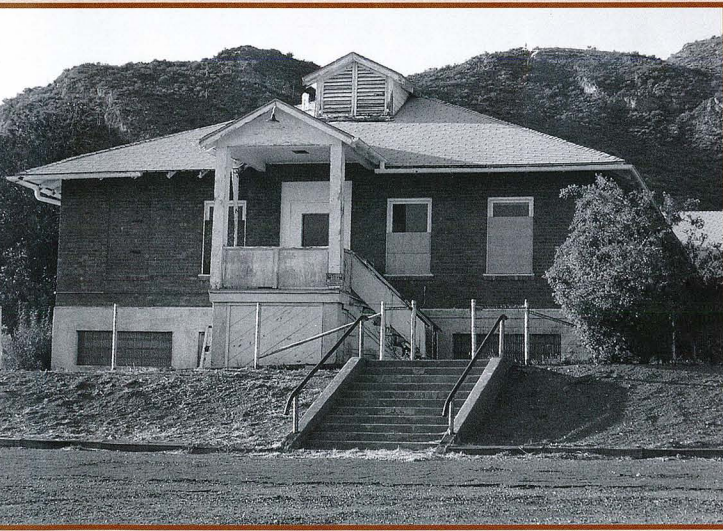
Resolution Copper's green building team hosted its first charrette (collaborative design process) in May 2005, which included a team orientation, discussion of green building principles and opportunities for implementing the project vision and goals. The meetings will be a continual part of the process as the Verde Building evolves.



Last year, several of RCC's environmental partners, including representatives from Audubon Arizona, toured Queen Creek Canyon to discuss opportunities for conservation management.

"Resolution Copper has made a long-term commitment to supporting biodiversity conservation and to developing a nature-based economy near the Resolution Project in Superior," said Bruno Hegner, vice president and general manager of Resolution Copper. "This collaborative effort with Audubon Arizona and other key state and environmental organizations ensures that Resolution Copper delivers on this promise."

"Audubon Arizona is very excited to receive a grant from Rio Tinto and BirdLife International in partnership with Resolution Copper Company to initiate the identification of Important Bird Areas in Queen Creek Watershed and the lower San Pedro River," said Tice Supplee, director of bird conservation for Audubon Arizona. "A significant part of the grant effort will be focused toward bird awareness events in the local communities and the development of curriculum and outreach materials that communicate



The Magma Hospital was constructed in the early '20s by Magma Copper.

Resolution Copper needs your help in developing the community room at the Verde Building!

We are seeking historical items that you may be willing to donate for display. Ideas include mining tools, historical photographs and any other item that represents the history and culture of Superior.

If you have an item you would like to donate or recommend for display, please contact Alma Suarez at 602.956.0223, ext. 21.

environmental learning through birds and bird habitats. This grant will represent the foundation for bird habitat partnerships with conservationists, landowners, and land and wildlife managers in eastern Pinal County."

There are several components to the project, including the Important Bird Area (IBA) nomination, data collection and compilation, and volunteer avian survey and training. A specific outcome will be the development of classroom curriculum and the publication of educational and outreach materials. The partners also plan to develop additional bird festivals in close proximity to the Superior area. Additional partners on the project include Arizona Game and Fish Department, US Forest Service, Boyce Thompson Arboretum, and Bureau of Land Management.

The grant is made possible through the Rio Tinto Partnership Action Fund and was facilitated by BirdLife International. BirdLife is a strategic partner with Rio Tinto, the parent company of Resolution Copper, and also lists National Audubon Society among its partner organizations. BirdLife is the organization responsible for the development of the IBA program, which is an area designated as a globally important habitat for the conservation of bird populations. In addition, Audubon Arizona, RCC and other environmental organizations partner to celebrate International Migratory Bird Day each May. We anticipate next year's annual birding festival will be enhanced by the expanded IBA program.

RESOLUTION COPPER COMPLETES STATEWIDE POLL, FINDS STRONG SUPPORT FOR RESOLUTION PROJECT

Resolution Copper recently conducted a second statewide poll to evaluate public perceptions of copper mining in Arizona to gauge support for the company's proposed mine development project in Superior. The polls show overwhelming support for the company and the proposed land exchange, as well as for the company's community relations programs.

The new survey results will be useful to the company in determining where to concentrate its financial and human resources as part of its commitment to create sustainable communities, both now and in the future.

For a complete copy of the results, visit www.resolutioncopper.com/community/survey.asp.

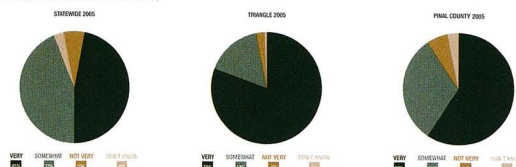
EXECUTIVE OVERVIEW OF RESEARCH FINDINGS

The information in this report is based on three random telephone samples of (1) adult heads of household living statewide in Arizona, (2) adult heads of household living in the "copper triangle," which includes Superior, Globe, Miami, Hayden, and Winkelman, and (3) adult heads of household living in Pinal County.

The surveys measure current attitudes toward developing a new copper mine near Superior and attitudes toward a proposed land exchange needed in order to develop the mine. The surveys were conducted during the first two weeks of August 2005 by professional interviewers under the direction of Dr. Bruce Merrill, Professor of Mass Communication and Director of the Media Research Program at Arizona State University. Dr. Merrill directed the surveys as a private consultant, not in his capacity as a professor at Arizona State University.

There continues to be strong support for copper mining in Arizona.

Eighty-two percent of all Arizonans (89% of those with an opinion), 95 percent of those living in the "copper triangle," and 86 percent of Pinal County residents feel that copper mining is important to the state's economy.



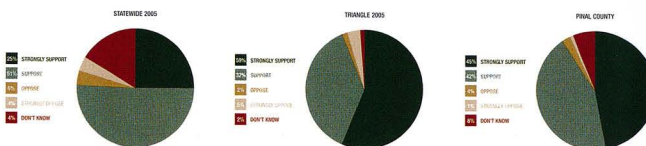
Evaluations of Resolution Copper Company are very positive.

Among those with an opinion, 82 percent of all Arizonans, 85 percent of those living in the "copper triangle," and 86 percent of Pinal County residents said their overall impression of the company is very favorable or favorable.

In the "copper triangle," where the mine will be developed and people are most familiar with Resolution Copper Company, the company receives high favorable ratings for protecting the environment (82 percent), supporting the community (84 percent), being sensitive to the needs of people living in the area (90 percent), demonstrating they care about the community (89 percent), and keeping people in the community informed about how the mine is developing (81 percent).

There is strong support for developing a new copper mine in Superior.

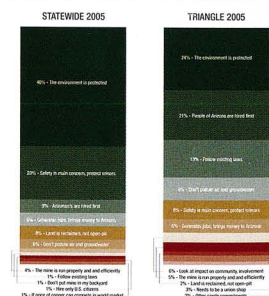
Seventy-six percent of all Arizonans (89 percent of those with an opinion), 91 percent of residents of the "copper triangle," and 87 percent of Pinal County residents are in favor of developing a new copper mine in Arizona.



The main reasons people support developing the mine include the expectation that the mine will create new, well-paying jobs; that it will generate significant income for local, county, and state government coffers; and that it will "trigger" economic and sustainable development in communities in the "copper triangle."

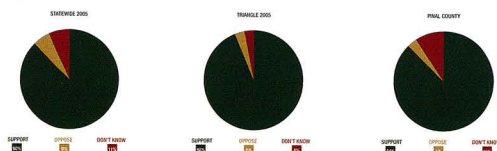
Arizona voters want a mine that protects miners and respects the environment.

Arizonans have well-defined expectations about how the mine should be developed and operated. The strongest expectation is that Resolution Copper Company will develop the mine with a constant awareness of protecting the environment. This means protecting flora and fauna, not polluting the air or water, and returning lands used in developing the mine to pristine condition. People also have expectations that the mine will operate with a strong commitment to safety. They also expect that local and state workers will be given preference in terms of being employed by the mine.



People in Arizona overwhelmingly support a land exchange with the federal government.

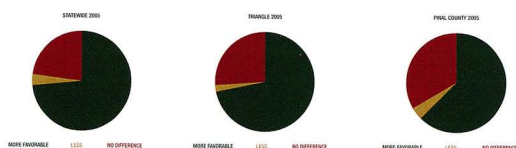
Eighty percent of all adults in Arizona (90 percent of those with an opinion), eighty-eight percent of those living in the "copper triangle" (94 percent of those with an opinion), and 84 percent of all Pinal County residents support a land exchange with the federal government so the mine can be developed in the Superior area.



Arizonans and residents of the "copper triangle" and Pinal County support relocating the campground and bouldering areas above Superior if necessary to develop the mine.

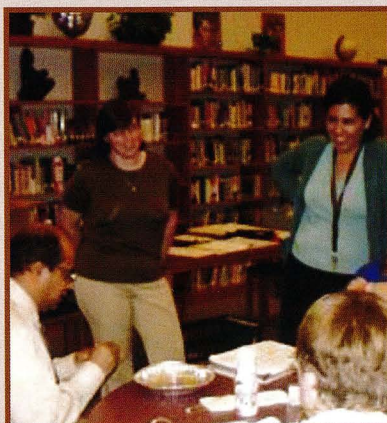
As noted above, people expect Resolution Copper Company to be an environmentally friendly company. However, there is strong evidence that Arizonans in general and especially people living in the "copper triangle" support relocating the federal campground and the areas used by rock climbers if necessary to develop the mine as long as the campground and bouldering sites are moved at company expense.

Only 6 percent of residents statewide and 4 percent of residents in the "copper triangle" indicated the need to move the campground and the bouldering area would cause them to have a less favorable opinion of the mine.



HAVE ROCKS, WILL TRAVEL: SUPERIOR SCHOOLCHILDREN ENJOY HANDS-ON CLASSROOM PROGRAM

Superior schoolchildren from John F. Kennedy Elementary and the Superior Junior/Senior High School attended a special presentation where they had the opportunity to discover the practical uses of rocks and minerals, participate in hands-on activities, and learn about the many exciting careers in the mining industry. The presentation, made possible by Resolution Copper, was coordinated by the Arizona Mining and Mineral Museum as part of the museum's statewide educational outreach series.



RCC, ASU's CRESMET and Superior schools launch the Superior science fair project. Other aspects of the project include visits from the college geology professors, as students visit Arizona State University and the science fair in April.

A Superior schoolteacher gets hands-on with a scientific experiment at a teacher orientation.

Coordinated by CRESMET, the Summer Certification in Secondary Mathematics (SCISM) will aim to recruit and prepare a highly qualified mathematics teacher for possible employment at Superior Junior/Senior High School. The goal of Superior-SCISM is to recruit and prepare mathematics majors to apply for a position teaching in a Superior secondary school. Resolution Copper will aid this program with a tuition/stipend support.

On the teacher orientation, Superior Junior/Senior High School Principal David Pastor had this to say:

"Input from teachers was outstanding, they enjoyed the experiments and the notebooks are excellent. The science kits are very helpful. The staff is looking forward to working with you and Sheila... we think it is the boost we need to move forward."

Another exciting program, No Barriers to Science, will support Superior teachers and students in grades 7–9 in creating projects for the Central Arizona Region Science and Engineering Fair (CARSEF) in April 2006. Superior students will gain hands-on practice in scientific inquiry methods as they design, conduct and present a scientific exploration. Students will work in groups at their grade levels to prepare projects for entry in CARSEF and will benefit from the professional guidance of CARSEF personnel. In addition to the opportunity to compete in this prestigious fair, CRESMET will host student teams and teachers on a field trip to ASU next spring. Plans also include classroom science demonstrations in Superior schools led by ASU geological science professors and a community fair in the spring to showcase the student's work.

Everyone involved believes these initiatives will be a win-win for the district, the students and the company. The opportunities for sharing ideas and encouraging student achievement are limitless, and RCC personnel are eager to mentor students in this exciting journey.

RCC, ASU AND SUPERIOR SCHOOLS PARTNER ON MATH AND SCIENCE INITIATIVES

Superior Unified School District, ASU's Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET), and Resolution Copper have partnered on several initiatives to advance their shared goals of promoting world-class teaching and learning of science and mathematics for Superior students.

Students in Superior Unified School District learned about the value of minerals and rocks as part of the Arizona Mining and Mineral Museum's *Have Rocks, Will Travel* classroom program. The program was sponsored by Resolution Copper.

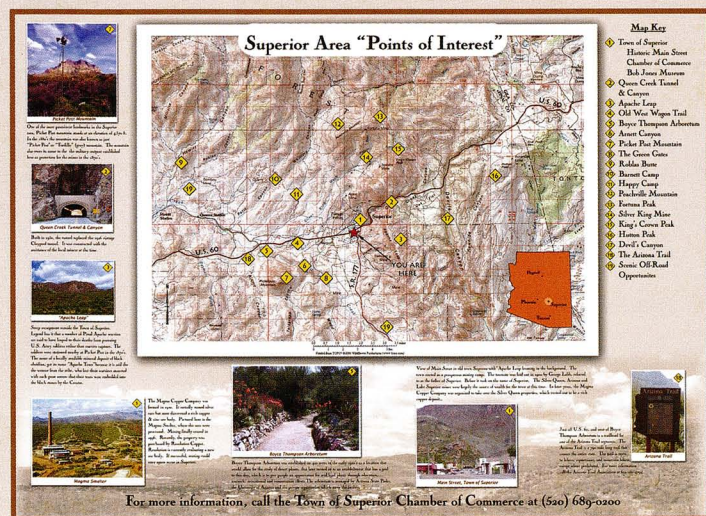
Liz Anderson, program coordinator, made three visits with Superior elementary and secondary school children. Jennifer Russo, corporate communications director for Resolution Copper, spoke with the students about the company's environmental efforts and about future career opportunities. Each student received a special Museum Treasure Bag, courtesy of Resolution Copper, containing rock and mineral specimens, a museum postcard, and a printed bookmark. The schools also received a free Teacher Identification Kit of Arizona Rocks and Minerals. The programs were a great success and everyone looks forward to future visits!

SUPERIOR SCHOOLS, AFRE AND RESOLUTION COPPER PARTNER ON EDUCATION WORKSHOPS

In May 2004, several educators from Superior Unified School District took part in a practical workshop hosted by the Arizona Foundation for Resource Education (AFRE). AFRE is a non-profit, collaborative network of Arizona's natural resource businesses and industries that serves to promote understanding about natural resources and related industries. The organization provides Arizona elementary and secondary teachers access to practical, hands-on educational programs and professional development opportunities that focus on the importance of Arizona's natural resources and other statewide educational initiatives. The workshop last year was met with significant enthusiasm and Resolution Copper was pleased to sponsor four attendees at a November 2005 workshop. Superior schools, AFRE and Resolution Copper look forward to future collaborations.

INTERPRETIVE SIGN PROJECT TO RECOGNIZE PAST, FUTURE OF SUPERIOR

In April of this year, Arizona Department of Transportation (ADOT) announced a sizeable grant for the Town of Superior to create an interpretive display for the US 60 rest area in town. The committee, which included local business and community leaders, as well as local artists, met on several occasions with an ADOT facilitator to collaborate on potential ideas, content and design for the interpretive displays. The committee decided on one permanent display illustrating the unique history of the town and surrounding areas and an interchangeable display featuring upcoming events and other local happenings. The project is out for bid, and the displays should be completed in the next several months.



Superior residents and ADOT worked together to develop themes for the new interpretive sign panels, including the above regional display map, that will be installed in the rest area located on US 60. Committee members included Town of Superior Mayor Michael Hing and Councilman Lynn Heglie; Superior residents Chuck Davidson, Tom Macias, Burdell Moody, Sylvia Perez and John Weber, and Superior resident and Resolution Copper employee Mike Alvarez.

SAFETY FIRST: FOCUS ON WORK ZONE SAFETY



At Resolution Copper, we continue to make safety a top priority. Safety does not stop and start at the Resolution Copper boundaries; it has to be a 24/7/365 way of life. As we build our safety program, we are pleased to share with our employees and with you the following work zone safety tips. The helpful advice is provided courtesy of

ADOT, who is working to improve your highways and ensure your travels are safe.

Did you know?

In the past five years, more than 11,000 people have been injured and more than 80 people have been killed in work zone crashes. This alarming statistic is punctuated by the fact that nearly all of those killed or injured were drivers or passengers traveling through work zones. With this in mind, it is important to drive with extra caution in work zones.

Before leaving on a trip, you can call 511 or log on to www.az511.com to check road conditions. Here are some additional safety tips for driving in work zones:

1. Expect the Unexpected. Normal speed limits may be reduced, traffic lanes may be restricted, and people may be working on or near the road.
2. Slow Down! Speeding is one of the major causes of work zone accidents.
3. Keep a Safe Distance. The most common type of accident in a work zone is a rear-end collision. Maintain two car lengths between you and the car in front of you, as well as road crews and their equipment.
4. Pay Attention. The warning signs are there to help you move safely through the work zone. Observe the posted signs.
5. Obey Road Crew Flaggers. The flagger knows what is best for moving traffic safely in the work zone. A flagger has the same authority as a regulatory sign. You can be cited for disobeying his or her directions.
6. Stay Alert and Minimize Distractions. Dedicate your full attention to the roadway and avoid changing radio stations or using cell phones while driving in a work zone.

7. Keep Up With the Traffic Flow. Motorists can help maintain traffic flow and posted speeds by merging as soon as possible. Do not drive right up to the lane closure and then try to barge in.

8. Check Road Conditions. Schedule enough time to drive safely, and check for traffic information by calling 511 or by logging on to www.az511.com.

9. Be Patient and Stay Calm. Remember, road crews are working to improve the road and your commute.

RESOLUTION COPPER'S BILL WILLIAMS JOINS STATEWIDE TECHNICAL WORKING GROUP ON CLIMATE CHANGE

As part of Arizona Governor Janet Napolitano's focus on climate change, the Arizona Climate Change Advisory Group has been evaluating sources of greenhouse gas emissions in Arizona and producing an action plan to reduce those emissions. The Group works with the Arizona Department of Environmental Quality.

Technical Working Groups have an advisory role and are charged with providing technical analysis and design policy options. Each Technical Working Group focuses on specific issues and sectors of the economy including Energy Supply, Transportation and Land Use and Manufacturing and Commercial, Industrial, and Residential. Bill Williams, Resolution Copper's Vice President of Health, Safety, Environment and Construction, was asked to serve on a Technical Working Group and is currently working with other technical experts on these important issues.

COPPER CORRIDOR ORE CART TRAIL MOVING FULL STEAM AHEAD; RESOLUTION COPPER DONATES FIRST ORE CART

The Copper Corridor Economic Development Coalition (CCEDC) Ore Cart Trail Project has become a reality, thanks in large part to the hard work of CCEDC members, public and private partners including Arizona Department of Transportation, Arizona Commission on the Arts, Department of Commerce and Arizona Office of Tourism, and locally elected officials. The project, which involves the designation of State Highways 77/177 as the Copper Corridor Ore Cart Trail, will identify and promote the route as a unified scenic and historic region and as an alternative travel route between Tucson and Phoenix.

The CCEDC has been working diligently to realize its vision, including organizing a support drive to increase awareness of the project. The effort by the CCEDC members, combined with the \$250,000 secured by



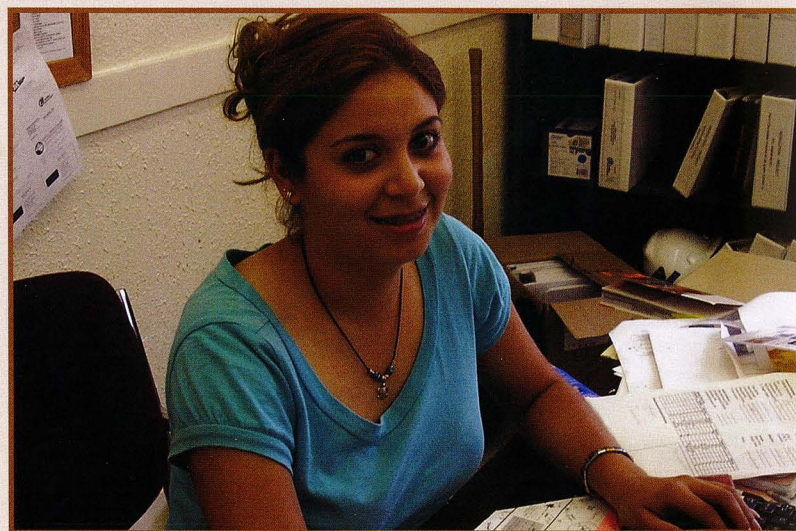
Resolution Copper personnel and Ore Cart Trail Project representatives celebrated the delivery of the first ore cart, donated by the company in August at a special reception hosted at Central Arizona College.

Congressman Rick Renzi for the project as part of the transportation bill, means the project is moving full steam ahead.

The project will offer ample opportunity for community involvement, including a public art competition to create renderings of life-sized antique ore carts. The ore carts will be featured in roadside turnouts and maintained by the local communities and businesses, making the project an opportunity to promote local attractions and resources in the region. This will hopefully translate into an economic tourism boost for the area.

REFLECTIONS FROM RESOLUTION COPPER INTERN ERICA DIAZ-GONZALEZ

For the past two years, I have participated in the Resolution Copper Summer Internship Program. With the working skills that I achieved last summer, I returned this summer and was able to complete projects and resolve challenges on my own.



Resolution Copper Summer Internship Program participant Erica Diaz-Gonzalez reflects on her second summer in the program.

I took part in several projects. One in particular was organizing the company's first recycling program. The recycling program connects the West Plant Site with the #9 field offices. Everyone works as a team to recycle materials, including paper, plastic and cardboard. I am proud to say that the company is taking a step toward keeping our environment clean and safe.

Another task I found exciting was designing the company's field guide. As a conservation biology major, I have a huge interest in nature and wildlife. Resolution Copper gave me the opportunity to research different plants and animals. The field guide is a small booklet containing photos and information of common plants, animals and reptiles found in the Queen Creek area that Resolution Copper employees could encounter when working in the field. This guide will help employees identify common plants and any endangered species or creatures that may pose a threat to their safety. This project took a lot of time and research, but it gave me the opportunity to work directly with Resolution Copper's Environmental Advisor, Dr. Casey McKeon, and Boyce Thompson Arboretum's Educational Coordinator, Chris Kline.

These are just a few of the job assignments I completed this past summer. I also spent many hours in the field backpacking down Queen Creek to conduct hydrology studies and working on the measurements of the tailing piles at the West Plant Site. I also conducted a baseline 24-hour community-based noise and traffic survey, collecting data on traffic flows near Superior.

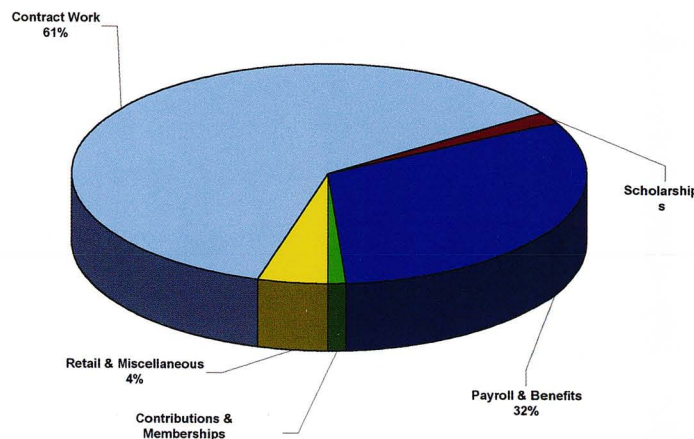
The team atmosphere at Resolution Copper is what makes this internship experience most valuable to me. It gives students such as me the opportunity to learn a variety of job skills. My working experience was enhanced when I was given the opportunity to work with different employees and learn their job requirements and everyday responsibilities.

The past two summers have been incredible and will be an experience I will cherish forever. I have learned many valuable occupational skills that will be a great asset to me as I work toward the completion of my bachelor's degree. I see a strong future ahead for me with Resolution Copper. I would strongly encourage high school seniors in Superior, Florence, Globe, Miami and Apache Junction to apply for the Resolution Copper Scholarship and take part in this great internship!

In 2006, Erica will be joining the Resolution Copper team part-time. Welcome aboard, Erica!

RESOLUTION COPPER COMPANY
Detail of Expenditures as of October 31, 2005
Town of Superior, AZ

Total 2005 YDT Spend: \$409K



Resolution Copper's expenditures total more than \$400,000 to date in 2005 in the Town of Superior. This includes monies for contractors, suppliers and charitable endeavors.

Resolution Copper continues to promote spending and sourcing of goods and supplies in Superior and surrounding communities. We also encourage our contractors to engage community resources wherever possible. To date, our company has invested more than \$1.5 million dollars in the region, including more than \$400,000 in the Town of Superior. In the coming years, RCC will continue to develop business relationships with a diverse group of suppliers and contractors and realize our commitment to community development.



Bill Williams, vice president of health, safety, environment and construction for Resolution Copper, presents an update on the Resolution Project and the company's environmental initiatives to the Globe-Miami Regional Chamber of Commerce.



Alma Suarez, community relations coordinator for Resolution Copper, poses with students from Superior HeadStart after a morning of sharing her favorite stories with the kids.

FAST FACTS

Mining contributed more than \$3.3 billion to Arizona's economy in 2004.

Copper mines employ about 22,400 Arizonans at an average salary of \$57,000.

The mining industry contributed more than \$30 million in revenue to Arizona school districts in 2004.



Jennifer Russo, corporate communications director for Resolution Copper, speaks to the Superstition Rotary in Gold Canyon about the Resolution Project.



COPPER:

An Economic Profile



Copper: Economic Engine for Arizona

Copper mining has been contributing to the economy of what is now called Arizona since before the arrival of Europeans in the 16th Century. Beginning in the late 19th Century, copper mining and processing became one of the primary means by which first the Arizona Territory and then the State of Arizona were transformed from a wilderness to a modern industrial economy. Copper mining, smelting, refining, and fabricating remain an important part of that economy today. The 2004 impact of copper on the Arizona economy:

- **\$3.316 billion** direct and indirect impact on the Arizona economy
- **\$1.048 billion** in personal income for Arizona residents
- **22,400** jobs for Arizonans
- **\$2.073 billion** in sales revenues for other Arizona businesses
- **\$194 million** in revenues for state and local governments throughout Arizona
- **\$204 million** in exports
- **\$23 million** in property taxes
- **\$30 million** to Arizona public schools

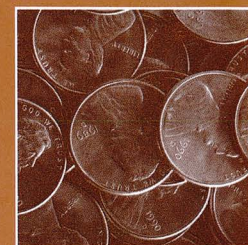
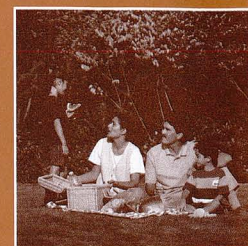


Arizona: Our Nations Biggest Copper Source

Arizona copper producers in 2004 had mining and processing operations at various locations in Cochise, Gila, Greenlee, Mohave, Pima, Pinal, and Yavapai counties that also produced substantial amounts of molybdenum, gold, silver, and other metals as byproducts in the production of copper. Arizona copper producers exported about 8% of the metals they produced to other countries, particularly in the Far East.

Arizona's three large copper producing firms (ASARCO, Phelps Dodge and BHP) and several smaller firms mined in 2004:

- **803,518 tons** of copper and other minerals worth **\$2.603 billion**
- **63%** of the copper mined in the United States in 2004



ASARCO



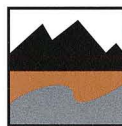
Copper: Good Jobs for Arizonans

Arizona copper industry workers have among the highest rates of pay in the state, exceeding the average of \$53,900 for manufacturing by 6%.

\$57,000 average annual salary

\$76 million paid in pensions and other benefits to former employees living in Arizona

\$91,000 in dividends paid to their stockholders who were located in Arizona



Copper: Productive Stewards of Land

To accomplish this great boon to Arizona's economy, the Arizona copper industry used less than one quarter of one percent of the total land area of the state (0.22% of Arizona's 72.7 million acres of land).

Arizona copper production directly and indirectly provided **federal revenues** of more than **\$834 million** in 2004. That amounted to \$5,280 of federal revenue per acre of land used by the Arizona copper industry in 2004.



If It Can't Be Grown, It Must Be Mined!

Everything we have comes from the Earth. If it's not a plant or animal, it's a mineral or made from minerals. It is estimated that each American uses about 23.5 tons of newly mined minerals each year.

What makes copper and copper-based products so valuable to us, and why do societies depend on them? Copper's chemical, physical and aesthetic properties make it a material of choice in a wide range of domestic, industrial and high technology applications. Copper is ductile, corrosion resistant, malleable, and an excellent conductor of heat and electricity. Alloyed with other metals, such as zinc (to form brass), aluminum or tin (to form bronzes) or nickel, it can acquire new characteristics for use in highly specialized applications. In fact, society's infrastructure is based, in part, upon copper. For instance, copper is used for

- conducting electricity and heat;
- communications;
- transporting water and gas;
- roofing, gutters, and downspouts;
- protecting plants and crops, and as a feed supplement; and
- making statues and other forms of art.

Copper has been in use for 10,000 years, yet it is still a high technology material, as evidenced by the development of the copper chip by the semiconductor industry.

BHP

PHELPS DODGE



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