

# Rosemont Copper -What's Going on in Arizona

Mine Design, Operations and Closure Conference Fairmont Hot Springs May 5, 2010

# Who is Rosemont Copper Company?



**Rod Pace** President & CEO 28+ yrs

- An Arizona Corporation, wholly owned subsidiary of **Augusta Resource Corporation**
- Augusta Resource is traded on the American Stock Exchange using the symbol AZC
- Offices in Tucson and Denver
- Team with over a century of mining experience



**Jamie Sturgess VP** Sustainable Development 30 yrs



**Lance Newman VP Project** Development 22 yrs



**Fermin Samorano** Mine Manager 15 yrs



**Dan Ryan** Community **Relations Mgr** 28 yrs



**Dennis Fischer Jeff Cornoyer** Site Coordinator 26 yrs



Geologist 5 yrs

## We all need copper every day

Copper is critical to the American economy







439 pounds

55 pounds

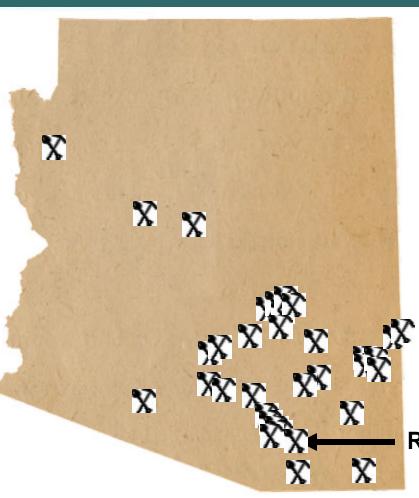
100+ pounds

The average U.S. person uses – 7 pounds of copper per year. The average Asian person uses - 2 pounds of copper per year.

In 2008 the U.S. imported 35 % of its copper needs.

Wind generation requires 12 times the amount of copper than a coal fired power plant to produce a kilowatt of power.

#### Arizona: The Copper State



# Arizona's history is intertwined with mining

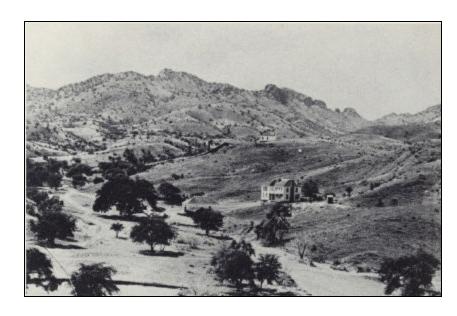
- Nation's top copper producer
- Provides 65% of U.S. copper supply on one quarter of 1% of state land
- More than all other 49 states combined

**Rosemont Copper** 

## History and Ownership

#### Helvetia/Rosemont Mining District

- Rosemont District mined 1870-1950
- First mining claims 1879-1885
- Congress recognizes Mining Districts – 1880's
- Southern Arizona leads nation's copper production – 1900
- First mining claims:
  - Narragansett, 1879
  - Eclipse, 1884
  - Backbone, 1885
- Recent History:
  - Banner Mining Company, 1961
  - Anamax, 1973 1986
  - Asarco, 1988 2004
  - Rosemont Copper, 2005

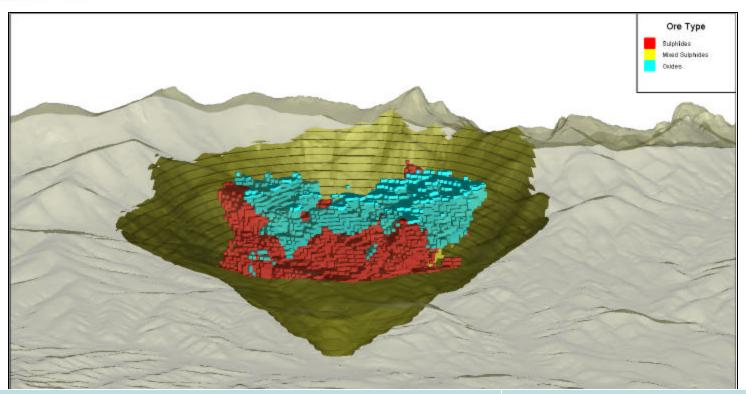


Old Rosemont, Ca. 1900

# Drilling at Rosemont

Company	Time Period	Drill Holes		
		Number	Feet	
Banner	1950s-1963	3	4,226	
Anaconda	1963-1973	113	136,728	
Anamax	1973-1988	52	54,350	
ASARCO	1988-1998	11	14,695	
Augusta	2005-2008	75	113,876	
Total		254	323,875	

# Rosemont Deposit



Sulfide Reserves			Oxide Reserves		
Short Tons (thousands)	% Cu	% Mo	Ag oz/t	Short Tons (thousands)	% Cu
546,338	0.45	0.015	0.012	69,974	0.17

# Setting Design Standards

#### **Environmental Initiatives**

- Sustainable Water Source
- Concurrent Reclamation
- Viewshed Protection
- Recognize goals of the Sonoran Desert Conservation Plan
- Community Endowment



#### Sustainable Water Source



- Progressive water conservation and recycling techniques
- 50-60% reduction in water use due to Dry Stack Tailings technology
- Recharged 45,000 ac-ft of CAP water into Tucson Active Management Area
- No fault insurance and well protection program in place for local well-owners

#### Concurrent Reclamation

- Slopes of 18 degrees (3:1)
- Topsoil and growth medium removed and saved for reclamation
- Reclamation to begin in the <u>first year</u> of copper production
- Rosemont \$550,000 research grant to U of A for studying native plant species

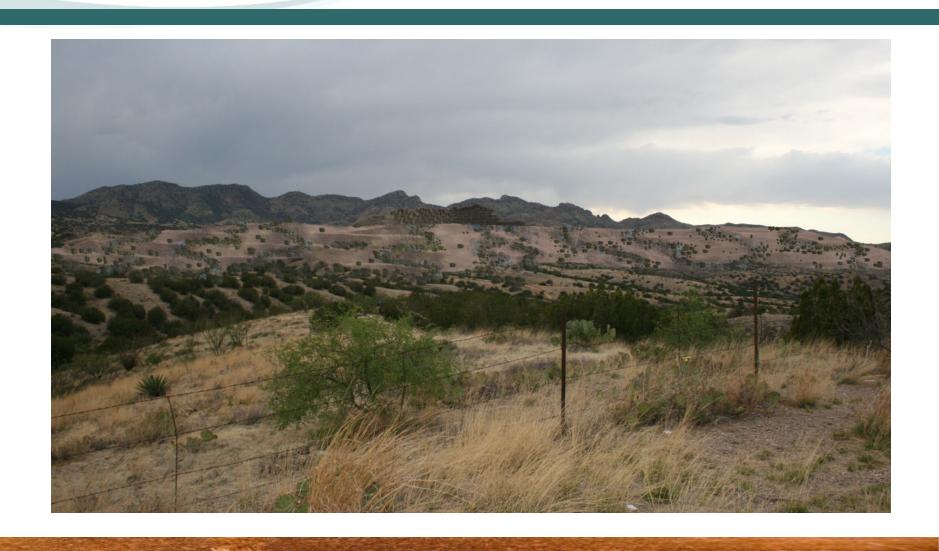


## **UofA Reclamation Test Plots**



#### Viewshed Protection

Reclamation at Year 10



#### Sonoran Desert Conservation Plan

- Biological core areas avoided
- Facilities placed in one compact area to minimize impacts to surrounding area
- Viewshed protection by perimeter berm
- Water diversions to maintain downstream flows

# Why Rosemont?

#### Carge

- ✓ 7.7 billion lbs copper; 190 million lbs molybdenum; 80 million oz silver
- ✓ Third largest copper producer in the US, 10% of Nation's production

#### Robust economics

- ✓ \$1.85 cu, 18% IRR, 5 Yr Payback
- ✓ \$2.47 cu, 28% IRR, 3 Yr Payback

#### High quality

√ 32% clean copper concentrates

#### Cost

√ \$0.62 per pound

#### Cow risk

- ✓ Excellent infrastructure near Tucson
- ✓ Not dependent upon disposable income



Rosemont Copper – Bankable Feasibility Completed Jan. 2009

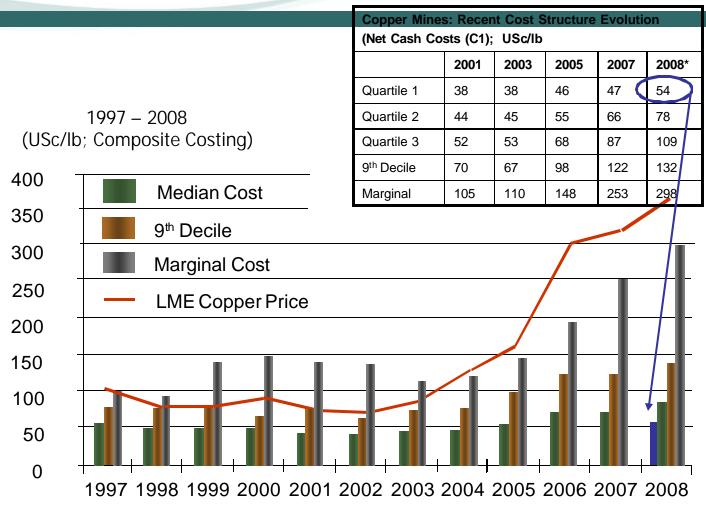
## Project Capital Investment

Time Period (2010-2012)

#### **Capital Cost Estimate – December 2009 Dollars**

	Sulfide Plant (thousands)	Oxide Plant (thousands)	Total (thousands)
Direct Cost	\$444,600	\$ 53,600	\$498,200
Mine Equipment	214,600		214,600
Indirect Costs	109,600	6,000	115,600
Contingency	63,800	5,100	68,900
Total	\$832,600	\$ 64,700	\$897,300

#### Robust Economics



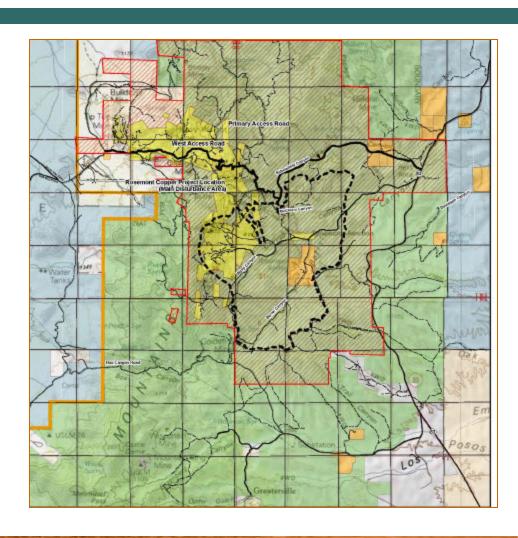
AZC cost
estimates fall
near Quartile 1
at ~\$0.62/lb
- well below
median and
marginal cost
producers.\*

Source: www.minecost.com; GSJBW Research Estimates

<sup>\*</sup> Based on January 2009 Bankable Feasibility Study

## Rosemont Copper Project

- Approximately 4,400 acres
  - 3,300 acres Federal
  - 900 acres Private
  - 200 acres State
- 530,000-acre working cattle ranch



## Rosemont Oxide Ore Processing

- Standard Leach, SX-EW
- ✓ Run-of-Mine Oxide Ore placed on a lined leach pad
- ✓ Double-lined ponds
- ✓ Solvent Extration Electrowinning process
- Copper cathodes shipped directly to customers



Electrolyte production at a solvent extraction plant

#### Oxide Leach Pad



#### Rosemont Concentrate Production

- Standard Crush-Grind-Flot
- ✓ Sulfide ore is processed in the following steps:
  - Crushing primary gyratory crusher
  - Grinding to a slurry SAG (Semi-Autogenous Grinding) mill and ball mill combination
- ✓ Standard Flotation
- ✓ Moly recovery
- ✓ Copper and moly concentrate is shipped off-site



**SAG and Ball Mill combination** 

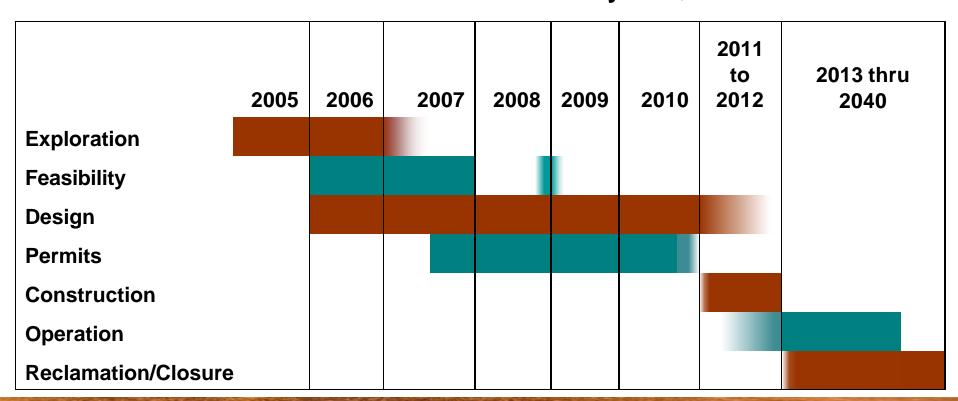
# Tailings Management



La Coipa Mine in Chile

### Mine Plan of Operations

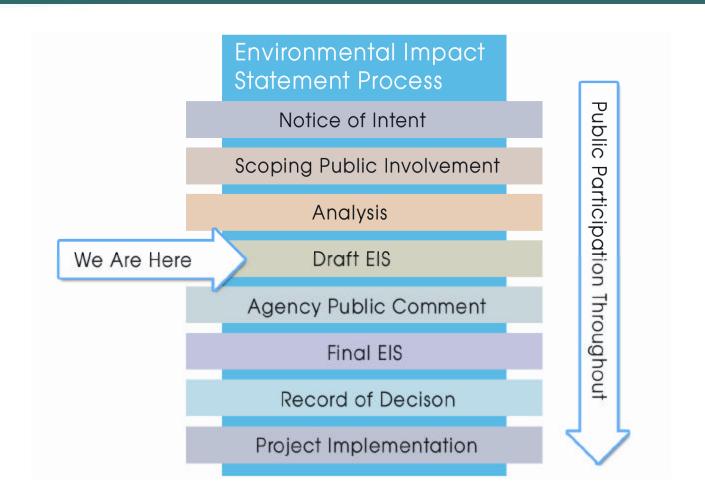
# Rosemont submitted plan to U.S. Forest Service July 11, 2007



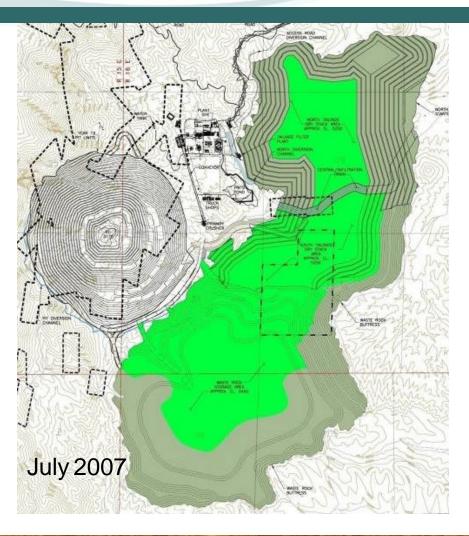
### Mine Plan of Operations

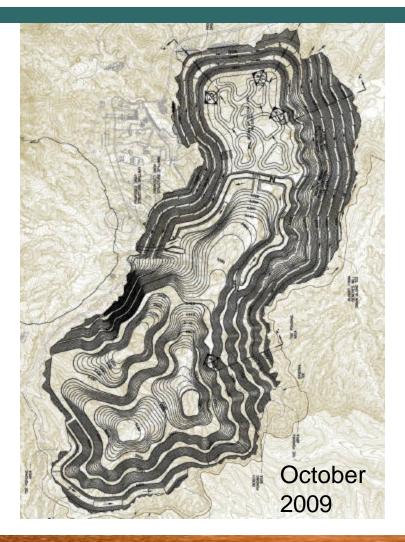
- Rosemont Copper submitted a Mine Plan of Operations to the US Forest Service on July 11, 2007.
- The MPO includes the Rosemont Copper project progressive design, conservation, and sustainability initiatives.
- The MPO consists of several documents:
  - The Mine Plan of Operations
  - The Infrastructure Plan
  - The Reclamation Plan
  - Additional Information requested by the Forest Service and BLM
- Forest Service declares sufficient to proceed to an EIS under NEPA in October 2007

## Environmental Impact Statement



# One Possible Interpretation of Changes Due to Public Comment



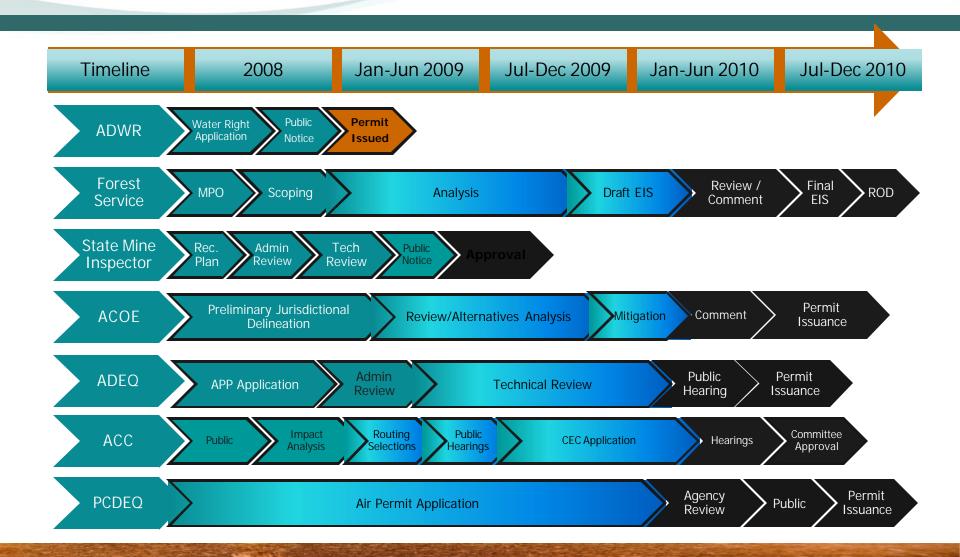


## Many Levels of Review

- Federal
  - US Forest Service
  - Army Corps of Engineers
  - Bureau of Land Management
- State of Arizona
  - Dept of Water Resources
  - Dept of Environmental Quality
  - Dept of Agriculture
  - State Mine Inspector
- Pima County
  - Dept of Environmental Quality



# Permitting Timeframes



#### Major Economic Engine

- Jobs during production 22 years
  - 2,100 annual direct and indirect jobs local
  - 2,900 annual direct and indirect jobs state
  - 4,200 annual direct and indirect jobs nation
- Annual Taxes for Arizona
  - \$ 19 million to local governments
  - \$ 32 million to state governments
  - \$128 million to federal governments
- Annual Economic Impact
  - \$701 million for 20 years to local counties
  - \$900 million for 20 years to the state
  - \$1.3 billion to the nation for 20 years

# LOCAL



Source: L. William Seidman Research Inst. W.P. Carey School of Business ASU July, 2009

#### Made in Arizona

# Rosemont already contracts with <u>many</u> local firms employing hundreds of people

- M3 Engineering
- Mountain States R&D
- Tetra Tech
- AMEC
- WestLand Resources
- Applied Environmental Consulting
- E.L. Montgomery and Associates
- Strongpoint Public Relations
- Fennemore Craig, PC
- Sonoran Pump Supply
- Darling Environmental/Survey
- Call and Nicholas
- DM Engineering
- Securitas
- Western Refining
- Stantec
- Cooper Aerial
- Verdad Group, L.L.C.
- Mountain View Tours

- Bonesteel Consultants
- Navigant
- Securitas
- Verizon
- Skyline Labs
- Fedex-Kinkos
- Alphagraphics
- Southwest Exploration Services
- Turner Laboratories
- Reprographics
- Physical Resource Laboratories
- Metcon
- · Boart Longyear
- Lang Drilling
- Layne Drilling
- University of Arizona
- Geomechanics Southwest
- Zonge Geosciences, Inc.
- Thomas Promotions
- Crossroad's Café in Sonoita

- Metro Restaurants
- Viscount Suite Hotels
- P&G Inc.
- KR Saline
- Environmental Planning Group
- Schlumberger Water Services
- CAS Laboratories
- Zimmerman and Associates
- Bob's Backhoe
- McMahon's Restaurants
- Pima Air and Space Museum
- Allegra Printing

#### Community Endowment

# During operations, \$25 million endowment Plus annual donation of \$500,000 run by a Board of Directors from community

#### Current community involvement program for local charities and activities.

- The Arizona Trail
- University of Arizona Athletics
- The University of Arizona College of Engineering
- Rocky Mountain Elk Foundation
- Tucson SME Chapter
- Chicanos Por La Causa
- Tucson Rough Riders
- SME Diggers & Duffers Golf Tournament
- Tucson Gem & Mineral Show
- Community Water Company
- Sahuarita Rage ASA Fastpitch
- Teachers Wish List
- Community Food Bank
- El Tour de Tucson
- Arizona Cattle Growers
- Tucson Hispanic Chamber
- Tucson Metro Chamber
- Green Valley/Sahuarita Chamber of Commerce
- Arizona Mining Association
- Greater Green Valley Community Foundation
- Tucson Regional Economic Opportunities
- · Green Valley Rotary
- Volunteer Center of So. Arizona
- Arizona-Mexico Commission

- AMIGOS
- Metropolitan Pima Alliance
- Arizona Geological Society
- Arizona Hydrogeological Society
- So. Arizona Environmental Managers Society (SAEMS)
- Greater Tucson Leadership Council (GTL)
- Casa de Los Ninos
- Arizona Theater Company
- Tucson Rodeo
- Key to Employment 21st Century
- Boys and Girls Club
- Pima Community College
- Pima Community College Foundation
- Tucson Alliance for Autism
- Steele Children's Research
- Foster Care Review Board
- American Heart Association
- National Rifle Association
- Pima Community College
- El Rio Foundation
- Mining Foundation of the Southwest
- Amphi Foundation
- · Reading Seed

- Girl Scouts
- Green Chamber of Commerce
- Perimeter Bicycling Association
- Gala-Noche de Exitos
- 4-H Club
- Sahuarita Elks Lodge
- Angel Charities
- Southern Arizona Rescue Association
- Arizona Foundation for Resource Education
- Biosphere 2 Earth Day
- Salvation Army
- Knights of Columbus
- Women in Science and Engineering (WISE)
- Sonoran Astronomical Society
- Ann Strandling Foundation
- Glassman Foundation
- Santa Cruz County Fair and Rodeo Association
- Arizona Opera Company



Resourceful.



## Thank you

www.RosemontCopper.com