SKY ISLAND ALLIANCE
Protecting our Mountain Islands and Desert Seas

ROSEMONT MINE
Summary of Impacts

Below is a list of significant issues related to the proposed Rosemont Mine and a brief summary of impacts, as determined by the U.S. Forest Service and discussed in the Draft Environmental Impact Statement (DEIS) Executive Summary. To view the DEIS Executive Summary, please visit the Coronado National Forest website: http://www.fs.fed.us/r3/coronado/

IMPACTS ON WATER RESOURCES: East Side Groundwater Availability

Exec. Summary at xxiii; See also DEIS Vol. 1 at 205-278

The proposed open-pit mine may reduce groundwater availability to private and public wells in the vicinity of the open pit. Household water availability may be reduced.

- "The presence of the mine pit would create a permanent hydraulic sink as a result of active pumping and long-term evaporation from the lake which would result in permanent drawdown in water levels in the regional aquifer."
- Drawdown would be "greater than 100 feet in the immediate vicinity of the mine pit and from 10 to 100 feet in the vicinity of the residences in Singing Valley and at Hilton Ranch Road."
- Drawdown may also occur in Corona de Tucson, along Cienega Creek, at the Davidson Canyon/Cienega Creek confluence, and along Empire Gulch and Gardner Canyon.
- "An estimated 500 to 550 registered wells are located within this area of drawdown" but the DEIS claims that specific impacts to these wells are not known.

IMPACTS ON WATER RESOURCES: West Side Groundwater Availability

Exec. Summary at xxiii; See also DEIS Vol. 1 at 205-278

Water needed to run the mine facility could reduce groundwater availability to private and public wells in the communities of Sahuarita and Green Valley, Arizona. Household water availability may be reduced.

- "5,400 acre-feet per year of groundwater would be pumped from the Upper Santa Cruz Subbasin of the Tucson Active Management Area and piped to the mine site in the Davidson Canyon/Cienega Basin."
- Rosemont's groundwater pumping "would represent a 6 to 7 percent increase in groundwater pumping from the Upper Santa Cruz Subbasin and a 2 percent increase in groundwater pumping from the entire Tucson Active Management Area."
- "Groundwater levels would decrease up to an additional 70 feet from the pumping."

IMPACTS ON WATER RESOURCES: GROUNDWATER QUALITY

Exec. Summary at xxiii; See also DEIS Vol. 1 at 278-296

Construction and operation of the mine pit, waste rock, and leach facilities may result in exceedances of Arizona Aquifer Water Quality Standards. The mine pit may result in the creation of a permanent pit lake, which may concentrate dissolved metals and toxins and may lower pH levels. Likewise, disposal of waste material in surface facilities such as tailings, waste rock, and leaching operations may contribute to degradation of the aquifer.

- "…seepage is expected to occur from the dry-stack tailings facility from remnant process water. Infiltration of precipitation could cause seepage from the waste rock facility. Both these sources could impact groundwater quality."
- Following closure of the heap leach facility, seepage is expected to continue at low flow rates for 115 years. Modeling indicates that remnant heap leach seepage would exceed numeric aquifer water quality standards for cadmium, nickel, and selenium." (emphasis added)
- Only "conceptually" does the current modeling show that this seepage can meet applicable water quality standards, and only after treatment that has yet to be determined.

IMPACTS ON WATER RESOURCES: SURFACE WATER AVAILABILITY

Exec. Summary at xxvii; See also DEIS Vol. 1 at 296-322

Construction and operation of the mine pit, tailings, waste rock, and leach facilities may result in changes in surface water discharge to Davidson Canyon and Cienega Creek, portions of which are designated an Outstanding Arizona Water by the Arizona Department of Environmental Quality.

- "Stormwater flow from the area would be reduced by 46 percent, and flow in Davidson Canyon, which is most likely dependent on stormwater stored in the shallow alluvial material, would be reduced by 10 percent."

IMPACTS ON WATER RESOURCES: SURFACE WATER QUALITY

Exec. Summary at xxvii; See also DEIS Vol. 1 at 322-349

Construction and operation of tailings, waste rock, and leach facilities may result in sediment or other pollutants reaching surface water and degrading water quality, leading to a loss of beneficial uses. Sediment may enter streams, increase turbidity, and exceed water quality standards.

- Rosemont Mine "would result in the loss of 47.8 acres of jurisdictional waters of the United States…and 213.8 acres of riparian areas. Sediment delivery downstream would be reduced from current conditions by about 51 percent at the water quality monitoring point in Barrel Canyon, by 18 percent at the mouth of Barrel Canon, and by about 5 percent at the mouth of Davidson Canyon."

IMPACTS ON SPRINGS, SEEPS, AND RIPARIAN HABITATS

Exec. Summary at xxi, xxiii-xxiv; See also DEIS Vol. 2 at 349-515

Potential impacts may include loss of riparian habitat and fragmentation of riparian habitat and corridors, including Cienega Creek.

- The mine would impact 1363 acres of riparian habitat, including:
    - "490 acres of hydroriparian or mesoriparian habitat along Cienega Creek,
    - "471 acres of xeroriparian habitat along Davidson Canyon,
    - "up to 204 acres of mesoriparian habitat along Davidson Canyon,
    - "58 acres of hydroriparian or mesoriparian habitat along Empire Gulch, and
    - "140 acres of hydroriparian or mesoriparian habitat along Gardner Canyon."
- "A reduction in average annual flow from 1 to 3 percent would occur along Cienega Creek from drawdown in the regional aquifer, resulting in .16 mile of lost perennial stream length. During periods of low flow (typically May and June), impacts could be much greater."
- "A reduction in flow of 10 percent would occur along Davidson Canyon from reduction in ephemeral flows stored in the shallow alluvial aquifer; the impact on perennial stream length in Davidson Canyon is not known."
- "A total of 63 springs would potentially be lost either directly to surface disturbance or to impacts from declining aquifer water levels."

IMPACTS ON VEGETATION AND HABITAT LOSS

Exec. Summary at xx; See also DEIS Vol. 2 at 349-515

The pit, plant, tailings and waste piles, road and utility corridors, and other facilities may result in a permanent change to the vegetation, and reclamation may not restore vegetation to pre-project conditions. The mine and ancillary facilities may result in a loss of habitat for numerous plant and animal species.

- The mine "would result in the direct loss or conversion of approximately 6400 acres of wildlife habitat, and may directly impact up to 145,190 acres."
- "There would be significant vegetation losses and changes in the area, resulting in a decrease in nesting, overwintering, foraging, and roosting habitat for dozens of species of migratory and resident birds. Every species currently occupying the area would potentially experience a deduction in individuals and population size." (emphasis added)

IMPACTS ON WILDLIFE MOVEMENT

Exec. Summary at xx; See also DEIS Vol. 2 at 349-515

The mine operations may modify and/or fragment wildlife habitats and/or reduce connectivity between habitats. The transportation system and increased traffic could result in more wildlife road kills.

- "An unknown number of acres of animal movement corridors and linkage areas would potentially be impacted."
- "The alteration of surface and subsurface hydrology from the pit and other mining related operations may result in the loss of riparian habitat and the fragmentation of riparian habitat and corridors."

IMPACTS ON SPECIAL STATUS SPECIES OR SPECIES OF CONCERN

Exec. Summary at xx; See also DEIS Vol. 2 at 349-515

Species of concern include those afforded protection under the Endangered Species Act, Forest Service and Bureau of Land Management sensitive species, Forest Service management indicator species, migratory birds of conservation concern, Arizona Game and Fish Department's wildlife of special concern in Arizona, and Sonoran Desert Conservation Plan priority vulnerable species.

- "…because of the magnitude, intensity, length, and around-the-clock timing of the project, all special status plants and animals that occur in the area are expected to be impacted." (emphasis added)
- "For two special status plant species (beardless chinchweed and Coleman's coral-root), all action alternatives may result in a downward trend toward Federal listing as threatened or endangered or in a loss of population viability."

IMPACTS ON AIR QUALITY

See Exec. Summary at xix; See also DEIS Vol. 1 at 158-205

Construction, mining, and reclamation activities at the mine and along transportation and utility corridors would increase dust, airborne chemicals, and transportation related (mobile) emissions in the affected area. Air quality standards could be compromised.

- "Particulate matter 2.5 would double and particulate matter 10 would triple, which would bring air quality levels to within 97% of the National Ambient Air Quality Standards."
- The mine would increase nitrogen oxide emissions by 4% in Pima County, which would increase the risk of the County exceeding the ozone air quality standards in the Tucson area.
- Mine emissions are expected to "cause and contribute to degradation of visibility in Saguaro National Park East and the Galiuro Wilderness."

IMPACTS ON LAND STABILITY AND SOIL PRODUCTIVITY

Exec. Summary at vii, xxvi; See also DEIS Vol. 1 at 136-157

Ground disturbance from clearing vegetation, grading, and stockpiling soils may accelerate erosion and reduce soil productivity.

- "The tailings and waste rock piles may be unstable over time, and reclamation may not adequately result in a stable, revegetated landscape…[and] may not support native vegetation."
- "Soils are nonrenewable resources, and loss of the soil resource may result in an irretrievable loss of soil productivity, physical structure, and ecological function across the proposed mine site and across downgradient lands."
- "The proposed action would result in the loss of 4,415 acres of soil productivity by direct impact of the mine footprint, and sediment delivery to the surface drainages would be about 16,000 tons annually, compared with 32,600 tons annually under current conditions."

IMPACTS ON CULTURAL RESOURCES

Exec. Summary at xxi; See also DEIS Vol. 2 at 660-699

Mine construction, operations, and closure would bury, remove, or damage historic properties, including traditional cultural properties, archaeological sites, historical structures, districts, and landscapes.

- "The proposed action would impact a total of 96 National Register of Historical Places eligible historic properties, consisting of 62 prehistoric sites (28 are known or likely to have human remains), 32 historic sites, and 2 multicomponent prehistoric/historic sites.
- "A total of 63 springs/seeps would be affected within the alternative or by drawdown in the surrounding area; springs are considered sacred by all of the tribes consulted by the Coronado."

IMPACTS ON RECREATION

Exec. Summary at xxvi; See also DEIS Vol. 2 at 511-551

Effects of the mine operation on recreation on National Forest System and Bureau of Land Management administered lands includes loss of access and recreational opportunities and loss of or reduction in solitude, remoteness, rural setting, and quiet.

- "The proposed action would result in a loss of 6,211 acres" that now offer abundant recreation opportunities.
- "A total of 30.5 miles of public roads and trails would be lost, and 3.8 miles of the Arizona National Scenic Trail would be relocated."
- "Four percent of hunt unit 43A would be affected, resulting in 776 annual hunter days lost for certain species (white-tailed deer, javelina, and Mearn's quail)."

IMPACTS ON VISUAL RESOURCES

Exec. Summary at x, xxviii; See also DEIS Vol. 2 at 452-511

The proposed mine tailings and waste rock piles would create significant changes to the landscape. The piles may block valued mountain views. The processing plant and transportation and utility corridors may affect visual resources in the area. The character of the State Route 83 designated scenic corridor and the views from it may change.

- "The scenic quality of the landscape may be permanently degraded."
- "The proposed action would include strong contrasts and adverse impacts from the highly visible pit face and diversion channel, along with permanent and major impacts, including the irreversible loss of scenic views, from highly visible piles and power lines visible in Box Canyon, along thet ridgeline, and at Lopez/Gunsight Pass for the life of the project."

IMPACTS ON DARK SKIES AND ASTRONOMY

Exec. Summary at xxii; See also DEIS Vol. 2 at 442-452

Increased light and air particulates from mine related facilities, equipment, vehicles, and processes may diminish dark skies. Airborne sulfur or sulfur compounds are known to damage the aluminum coatings on telescope optics. The increased sky glow would reduce the visibility of all celestial objects, particularly the faint ones, which are often the subject of scientific study.

- "The proposed action would cause long-term adverse impacts on astronomy research at Whipple Observatory and Jarnac Observatory, and would cause long-term adverse impacts on amateur astronomers, star gazing, and general public viewing regionally and within the Santa Rita Ecosystem Management Area."

IMPACTS ON PUBLIC SAFETY

Exec. Summary at xiii, xxv-xxvi; See also DEIS Vol. 2 at 643-660

Hazardous materials would be transported, which may increase the risk of a spill or other public safety impact. Another aspect of this issue is human health risks to Coronado National Forest visitors if they accidentally come near the mine operations, tailings, or waste rock piles. Air quality impacts resulting from the operation may be harmful to public health.

- "Truck shipments over the life of the mine are estimated at 582 round trips per week. Copper and molybdenum concentrate shipments would form the largest number of routine truck shipments with approximately 56 round trips per day, 7 days a week."
- "The proposed action would result in traffic increases up to 10 to 88 percent during year 1 of the construction phase" and only if 75 percent of their commuting employees carpool.
- With no carpooling, residents can expect traffic increases up to "128 to 290 percent during year 5 of the operation phase, and 204 to 356 percent by the end of the mine life."
- "Direct impacts to public health and safety associated with traffic would remain after mitigation."

SOCIOECONOMIC IMPACTS

Exec. Summary at xxvi; See also DEIS Vol. 2 at 699-754

The mine operation may have negative and positive socioeconomic impacts that may change over time. The mine facilities and operation may result in changes over time to local employment, property values, tax base, tourism revenue, and demand and cost for road maintenance and emergency services…The mine operation may not conform to the quality of life expectations as expressed by the forest plan and Federal, State, and local regulations and ordinances.

- "There would be increased funding needs for road maintenance on State Route 83 and other roads" while the mine is in operation.
- The mine "would result in a possible decrease in area property value and would cause a potential degradation of the area quality of life in terms of community values."
- "There would be disproportionate effects on environmental justice communities as a result of impacts to cultural resources."