A. Executive Summary of the Mine Plan of Operations

AUGUSTA
RESOURCE CORPORATION

ROSEMONT COPPER

ROSEMONT PROJECT
Mine Plan of Operations

Executive Summary

July 11, 2007

MINE PLAN OF OPERATIONS

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EXECUTIVE SUMMARY

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INTRODUCTION

The subject of this Mine Plan of Operations (MPO) is the sustainable development of an open pit copper mine known as the Rosemont Copper Project (Project), which is owned by, and will be developed and operated by, Augusta Resource Arizona Corporation (Augusta), a wholly owned subsidiary of Augusta Resource Corporation. Augusta maintains offices in Denver, Colorado, USA, and Vancouver, British Columbia, Canada.

The proposed project is located on the east side of the Santa Rita Mountains approximately 30 miles (mi) southeast of Tucson, Arizona and west of State Route (SR) 83. The anticipated life of Rosemont Copper is 25 years with reclamation occurring from the beginning of mining activities. In addition, Rosemont Copper will endow $50 million in funding for conservation of the land for open space for generations to come.

The core of the Project consists of 132 patented lode claims that total an area of 1,968 acres (ac). Surrounding the patented lode claims is a contiguous group of 850 unpatented lode mining claims that total an area of approximately 12,000 ac. Additionally, there are 14 parcels of fee land grouped into six individual areas that total 911 ac. Most of the unpatented claims were staked on Federal land now administered by the United States Department of Agriculture (USDA) Forest Service's (USFS) Coronado National Forest (CNF), but a limited number of claims in the northwest portion of the property are on Federal land administered by the United States Department of the Interior Bureau of Land Management (BLM). Some of the claims predate Arizona Statehood and the designation by United States Congress of the CNF. The area covered by the patented claims, unpatented claims and fee lands total approximately 14,880 ac. All private land and unpatented mining claims described above are owned and/or controlled by Augusta (Figure E-1).

The Project will result in impacts to approximately 530 ac of private land and 3,670 ac of CNF land. Impacts are divided into three broad categories as follows:

- Plant Site (including access road and ancillary facilities): 355 ac
- Tailings/Waste Rock/Leach Facilities: 2,895 ac
- Pit (including associated access roads): 950 ac

Some additional impacts are anticipated from offsite power and water utilities.

MINING HISTORY OF THE AREA

The early history and production from the Property has been described in Anzalone (1995), from which the following summary is taken.

In the 1880s the production of copper from mines on both sides of the northern Santa Rita Mountains supported the construction and operation of the Columbia Smelter at Helvetia on the west side of the Santa Rita Mountains and the Rosemont Smelter in the Rosemont Mining District on the east side of the Santa Rita Mountains. Copper production ceased in 1951 after the production of about 227,300 tons (T) of ore containing 17,290,000 pounds (lbs) of copper, 1,097,980 lbs of zinc and 180,760 ounces (oz) of silver. An unknown, but probably minor, portion of the production came from the Rosemont deposit.

In addition to the Rosemont deposit, the Peach-Elgin deposit was a significant resource in the area. Since shutdown in 1951, the area stretching from Peach-Elgin to Rosemont has seen a progression of exploration campaigns. Churn drilling at the Peach-Elgin prospect in 1955 and 1956 by Lewisohn Copper Company began the definition of that deposit. Drilling in 1956 by American Exploration and Mining Company initiated exploration of the Broadtop Butte prospect. Banner Mining Co. had acquired most of the claims in the area by the late 1950s, and drilled the discovery hole into the Rosemont deposit. Anaconda Mining Company acquired the claims in 1963 and carried out a major exploration program that identified the Rosemont deposit as a major porphyry copper body and advanced the Broadtop Butte and Peach-Elgin prospects. The project carried on after Amax and Anaconda joined in the Anamax partnership. In 1986 Anamax sold the Property to a real estate company during the dissolution of Anaconda. By the end of the Anaconda-Anamax programs, exploration drilling totaled in excess of 297,321 ft, of which approximately 232,000 ft defined the Rosemont deposit.

ASARCO purchased the property in 1988, renewed exploration of the Peach-Elgin prospect, and initiated engineering studies. ASARCO drilling of the Rosemont deposit was limited to a small number of geotechnical diamond drill holes. ASARCO sold the entire property to real estate interests in 2004. Augusta acquired the Rosemont Property in 2005.

FEDERAL MINING POLICY

Federal policy encourages and supports a viable mining industry for the development of domestic mineral resources. To maintain the nation's industrial and security needs, federal policies encourage private enterprise in the economic development of domestic mineral resources. The Mining Law of 1872 (20 USC 22 et seq.) opened public lands to exploration and development and granted a person who discovers valuable mineral deposits the right to extract and sell these minerals. This policy was affirmed in the Mining and Minerals Policy Act of 1970 and the National Materials and Minerals Policy, Research and Development Act of 1980. The 1970 legislation stated that an "economically sound" mining industry was important for both economic and national security reasons. The 1980 legislation noted the need to encourage mineral exploration and development. The proposal to develop the Project is consistent with past and current USFS and BLM federal mineral development policies.

MINE PLAN OF OPERATIONS (MPO) OVERVIEW

Access

Access to the Property will be via two routes: the primary access route from the east, and a secondary access route from the west. The primary access road to the Property will extend approximately 3.7 mi from SR-83 at a point between mile markers 46 and 47 and end at the main guard building at the entrance to the plant (Figure E-2).

The intersection of the access road with SR-83 will be at a point that provides clear line of sight for up to 2,500 ft in each direction. SR-83 will be modified to provide safe ingress and egress from the access road. Modifications will include a 500-ft long center accelerating lane, that is 12-ft-wide, allowing travelers to safely accelerate to speed before merging with traffic. This center lane will extend for 500 ft to the south of the intersection to serve as a left-turn lane for northbound traffic from Sonoita to turn onto the access road. A 220-ft long deceleration and right turn lane, also 12-ft-wide, will be constructed on the right side of the highway approaching the intersection. The 12-ft-wide lane will continue to the south of the intersection for 500 ft to serve as an accelerating lane for traffic going south to Sonoita.

A secondary access road will be located to the west over the ridge of the Santa Rita Mountains, connecting to Santa Rita Road at Helvetia Road. This west access road is considered a secondary access for plant maintenance employees to reach the fresh water pump stations, associated water pipeline, and for utility companies to reach to the electrical transmission line.

Open Pit

The recent confirmation of a significant mineral resource and the close proximity of this material to the surface, make mining the Rosemont deposit viable using modern open pit mining techniques. The footprint of the Rosemont Copper Mine will be substantially smaller than typical open pit copper mine in Arizona. Mining operations will be conducted from 50-ft-high benches using large-scale equipment. Ore will be delivered to the processing plant at a rate of 75,000 tons per day (tpd) for purposes of concentrating and/or extracting copper, molybdenum, and silver. On average, about 195,000 tpd of waste rock must be removed to maintain adequate ore supplies for continuous plant operations, bringing the total daily material production from the open pit to approximately 250,000 to 275,000 T.

At the rim, the open pit will be about 6,500 ft north to south, 6,000 ft east to west, and will be about 1,800 to 2,900 ft deep. The pit bottom elevation is projected at 3,150 ft above sea level. The design of the open pit and internal mining phases incorporates geotechnical considerations for safe slope angles, internal ramp development for access to all working areas, and pit wall smoothing to enhance stability and operator safety.

Haul Roads

Mine haul roads will be constructed around the north, east and south edges of the planned ultimate pit limits. Temporary haul roads will be constructed internal to the ultimate pit limits to provide access to all working faces in the open pit mine. The roads will be connect to the primary crusher, oxide leach pad and waste rock storage areas located to the southeast, east and northeast of the pit. Haul roads will generally be 120 to 130 ft wide, inclusive of safety berms, and will accommodate 250- to 360-T off-highway mine haulage trucks. The maximum gradient for the mine haul roads will be 10%, although short intervals may be constructed as steep as 12%.

Mine Production Schedule

The mine production schedule is presented in the table below. Preproduction stripping will require 18 months to prepare for full-scale mining operations, training work crews, constructing access/haul roads, and clearing and grubbing the pit and waste rock storage areas that will be disturbed during the initial years of operation. Peak material handling rates will occur in Years 1 and 2, averaging about 342,000 tpd of total material before decreasing to nearly 322,000 tpd for Years 3 through 12.

Rosemont Mine Production Schedule

Time Period	Sulfide Mill Ore				Oxide Leach Ore		Waste Ktons	Total Ktons	Strip Ratio
	Ktons	% Cu	% Mo	Ag oz/t	Ktons	% Cu			
Preprod	3,328	0.27	0.012	0.10	14,979	0.17	101,293	119,600	5.53
Yr 1	19,444	0.42	0.015	0.14	18,244	0.20	84,286	121,974	2.07
Yr 2	27,375	0.54	0.015	0.12	5,320	0.17	92,305	125,000	2.82
Yr 3	27,375	0.45	0.013	0.10	937	0.17	89,088	117,400	3.15
Yr 4	27,375	0.53	0.015	0.17	2,602	0.14	87,423	117,400	2.92
Yr 5	27,375	0.45	0.013	0.11	5,002	0.15	85,023	117,400	2.63
Yr 6	27,375	0.49	0.013	0.14	2,195	0.17	87,830	117,400	2.97
Yr 7	27,375	0.50	0.014	0.12			90,025	117,400	3.29
Yr 8-10	82,125	0.49	0.012	0.12	166	0.16	269,909	352,200	3.28
Yr 11-15	136,875	0.49	0.015	0.12			287,195	424,070	2.10
Yr 16-19	86,705	0.41	0.019	0.13			14,050	100,755	0.16
Total	**492,727**	**0.47**	**0.015**	**0.12**	**49,445**	**0.18**	**1,288,427**	**1,830,599**	**2.38**

(Excludes 3,026 ktons of stockpiled sulfide ore rehandled in Year 1 and 302 ktons in Year 19.)

Ore and Waste Rock Placement

Sulfide ore will be transported via 260 T off-highway haul trucks from the open pit to the primary crusher located near the east pit rim. After crushing, the sulfide ore will travel by overland conveyor to a covered crushed ore stockpile. The material will then ultimately pass through feeders onto another conveyor that will connect to the semi-autogenous grinding (SAG) mill at a daily rate of 75,000 T.

Oxide ore will be transported by haul trucks from the open pit to the lined leach pad. The oxide ore will not be crushed, but will be dumped in 30-ft-high lifts atop the lined pads for subsequent leaching.

Crawler dozers will be used to spread the oxide ore and cross rip the material to a depth of 5 to 6 ft to promote the infiltration of barren leach solution. Oxide ore will be leached with weak acidic solution, and the leach solution will be processed using solvent extraction-electrowinning (SX-EW) technology to produce high purity copper cathode plates. Oxide ore mining and placement on the leach pad will be concentrated in the early years of operation, peaking at about 41,000 tpd in Year 1. About 85% of the oxide ore will be placed onto the leach pad by the end of Year 5.

Waste rock will be transported to storage areas located to the southeast, east and northeast of the proposed open pit. All of the waste storage areas will receive pit-run waste rock consisting largely of limestone and skarn rock types, with some andesite, quartz monzonite porphyry and arkose. The presence of substantial quantities of limestone and skarn will provide a large buffering capacity within the waste rock storage areas to minimize acid rock drainage.

Product Production and Distribution

Copper concentrate produced at the concentrator plant will be loaded into highway haul trucks and transported to a concentrate smelter and metal refinery. Molybdenum concentrate produced at the concentrator plant will be bagged and loaded onto trucks for shipment to market. The copper cathodes will be loaded onto flat bed trailer/semi tractor overland trucks for shipment to market.

Ancillary Facilities

The ancillary facilities necessary to support the Rosemont operations include an administration building, change house, warehouse with lay down yards, analytical laboratory, light vehicle and process maintenance building, mine truck shop, mine truck wash and service facility, secured powder magazines and ammonium nitrate storage, and a main guard building with truck scale. Also included are fuel and supplies storage as well as dispensing facilities for mine and process equipment.

Electrical Power

The available electrical power supply for the Rosemont mine and process facilities falls within the Tucson Electric Power (TEP) and the TRICO service territories. Geographically, the area east of the Rosemont pit (which includes part of the mine and all the process facilities), falls in the TEP service territory. The area west of the Rosemont pit (including the balance of the mine and the fresh water pumping system) falls in the TRICO service territory. Because most of the mine's estimated electrical load and power requirements fall within TEP's service territory area, TEP will be the main electric utility service provider for the entire facility, including the fresh water system.

In addition to traditional electrical service from commercial providers, the Project will also generate energy on site using solar technologies such as passive solar, as well as photovoltaic (PV) cell technology for supplemental electricity generation. By using the significant available surface area on facility roofs for the installation solar systems (approximately 300,000 sf), Rosemont will be able to enhance the overall

energy efficiency of the operation. The use of PV at the Rosemont facility will provide an increased profile for PV installations in Arizona, contributing to the goals of the Arizona Commerce Commission to enhance employment opportunities from PV installation, while contributing to reduced greenhouse gas emissions.

NATURAL AND CULTURAL RESOURCE CONSIDERATIONS

Water Resource

The design team for the Rosemont Project recognized early on that the proposed Project was near the environmentally sensitive Davidson Canyon drainage area in the Cienega Creek watershed southeast of Tucson, Arizona. Specifically, the Rosemont deeded lands and unpatented mining claims are located 5 to 10 mi west of Cienega Creek and its associated aquatic and riparian ecosystems which support a number of sensitive species.

Historically, mining companies that had evaluated development of the rich ore deposits in the Rosemont area had planned to develop the associated water supply for mining operations from groundwater aquifers to the east of the mine site within the Cienega Creek groundwater basin. Because of the environmental sensitivity of Cienega Creek, Augusta determined at the beginning of its planning process to instead acquire the Project mining water supply from the Tucson Active Management Area (AMA) groundwater basin to the west of the project site.

This water supply decision, though quite expensive to implement, allows Augusta to achieve important water management goals in addition to meeting the mining operational requirements. Using water from the Tucson AMA eliminates the water supply impact of the Rosemont operations on the sensitive Cienega Creek drainage. It also allows Augusta to purchase and recharge water from the Central Arizona Project (CAP) aqueduct, which reaches the Tucson AMA basin but not the Cienega Creek basin. Purchasing and recharging CAP water allows Augusta to replace more than its entire consumption of Tucson AMA water with renewable Colorado River supplies, thereby creating a net positive impact by the Project on the groundwater resources of the region.

Augusta has no legal obligation to replace any of the water it will produce for the operation of the Rosemont mine. No other mining operation in the region has previously done so. However, Augusta has made a commitment to the local community to recharge 105% of the total mine water production within the Tucson AMA basin, as close to the water production site as is feasible. The total life-of-mine usage is currently estimated to be 100,000 acre feet (ac-ft), resulting in a recharge commitment of 105,000 ac-ft.

In addition to the commitment to offset 105% of total project pumping with recharge in the Tucson AMA basin, Augusta also plans to utilize state-of-the-art water conserving technologies in the Rosemont operation, and to always have its cumulative recharge volume be larger than its cumulative pumping quantity. To this end, Augusta has begun its recharge program in 2007, with contracts in place to recharge

15,000 ac-ft (approximately 3 years of planned mine usage) of Colorado River Water into the Tucson AMA basin in calendar year 2007. As of July 2007, two years of water supply have already been stored.

Fresh water for the Rosemont Project will be supplied from two to four wells located west of the Santa Rita Mountains, in the Tucson AMA. Water from the wells will be transported to the mine site via a pipeline and booster system and will be discharged to a concrete holding tank. Water will be pumped by a series of booster stations from the holding tank to the fresh/fire water tank.

Biological Resources

Details of the biological resources occurring on the Property, as well as anticipated mitigation for impacts to these resources, are included in the technical report *Biological Resources and Mitigation Concept: Rosemont Project* (WestLand 2007). A summary is provided here.

The Property ranges in elevation from 4,400 to 6,300 ft above sea level and supports a variety of upland habitat with vegetation characteristic of Madrean Evergreen Woodlands (characterized by open woodlands or savanna) and Semidesert Grassland (characterized by open grasslands with widely scattered shrubs and cacti). Riparian areas are present along some of the major washes and in small patches at some of the more reliable springs.

A variety of mammals, birds, reptiles, and amphibians comprise the wildlife community on the Property. Special-status species considered to date include those covered by the Endangered Species Act (ESA) and those considered sensitive by the USFS. A preliminary evaluation comparing habitat requirements of special-status species (including geographic and elevation ranges) with habitat occurring on the Property was completed, and determined that three of the ESA-listed species known to occur in Pima County (the Huachuca water umbel, Chiricahua leopard frog, and Lesser Long-nosed Bat [LLNB}) may be present on the Property. Several springs on the Property constitute potential (though marginal) habitat for the Huachuca water umbel and Chiricahua leopard frog. These springs were surveyed and no individuals of either species were identified. Abandoned mine shafts and adits on the Property may provide roosting habitat for the LLNB, and evidence of nectar-feeding bats was identified in three of these features during survey. However, no LLNB individuals were observed, and another nectar-feeding bat, the Mexican long-tongued bat, was positively identified during surveys.

Of the 47 plant species in Pima County listed as sensitive by the USFS, one (the Arizona giant sedge), was observed on the Property and three, though not confirmed, are considered probable to occur on the Property because of suitable habitat and known occurrence very close to the site (ARPC 2001). Of the 32 Forest-sensitive animal species that are not also ESA-listed, six (three insects, one amphibian, one reptile, and one bird) are considered possibly or probably present on the Property, based on geographic range and habitat requirements.

Viewshed Analysis

A viewshed analysis has been completed for the Rosemont Project using the top of the Coarse Ore Stockpile Building and the high point of the lined heap leach pad. Three project phases were analyzed for the Rosemont plant site (Year 0, 5, and 15) utilizing an elevation of 5,200 ft, which represents the highest point of the proposed plant. The highest point of the lined heap leach pad is 5,280 ft.

As the life of the mine progresses, the waste rock storage areas and the perimeter buttresses become larger, shielding the plant from view. In Year 0, the plant can be seen from various locations to the east and southeast along a four mile stretch of SR-83. Views of the plant from the south and Sonoita at this time are minimal to nonexistent. By Year 5, the screening berm has limited the visibility of the plant the 4-mi stretch of SR-83, though not completely, and there is virtually no view of the plant from the south. Midway through the mine operation, the plant is completely shielded from viewers along SR-83. The highest points of the pit wall are visible from a larger area, although the reclaimed slopes and crest of the perimeter buttresses will dominate the foreground and minimize the highwall views. A line of sight analysis was performed from the mile post 44 turnout along SR-83 to determine what portion of the pit wall would be visible from that location. This analysis showed that only a small portion of the final pit configuration (approximately 10.7 ac) will be visible.

Cultural Resources

The Project area has a ranching and mining past, and many relics of these enterprises remain. In addition, evidence from past archaeological surveys indicates that prehistoric sites are present as well. A preliminary records search has shown that as many as 50 archaeological surveys have been conducted on or very near the Project area.

As a part of the NEPA analysis, CNF, with the help of a qualified archaeological contractor, will determine the adequacy and coverage of previous archaeological work as it relates to the proposed new mine plan. A new Class III (100%) cultural resources survey will be conducted on any lands that are within the Project analysis area where previous survey coverage is determined to be inadequate or incomplete.

CNF has the responsibility of consulting with interested tribal entities and the State Historic Preservation Office (SHPO) as part of the National Environmental Policy Act (NEPA) review, as well as for compliance with the National Historic Preservation Act (NHPA) Section 106. During these consultations, SHPO and interested tribes will participate in the preparation of a plan for the treatment of the cultural resources which may be affected by the Project.

Air Quality

The Project will require either a Class I or Class II air quality permit, depending upon the magnitude of emissions from point sources. Key elements of the air quality permit process are development of an

emission inventory and demonstration of protection of all applicable federal, state, and local air quality related standards and guidelines. Augusta has initiated a monitoring program in anticipation of the air quality permit application submittal.

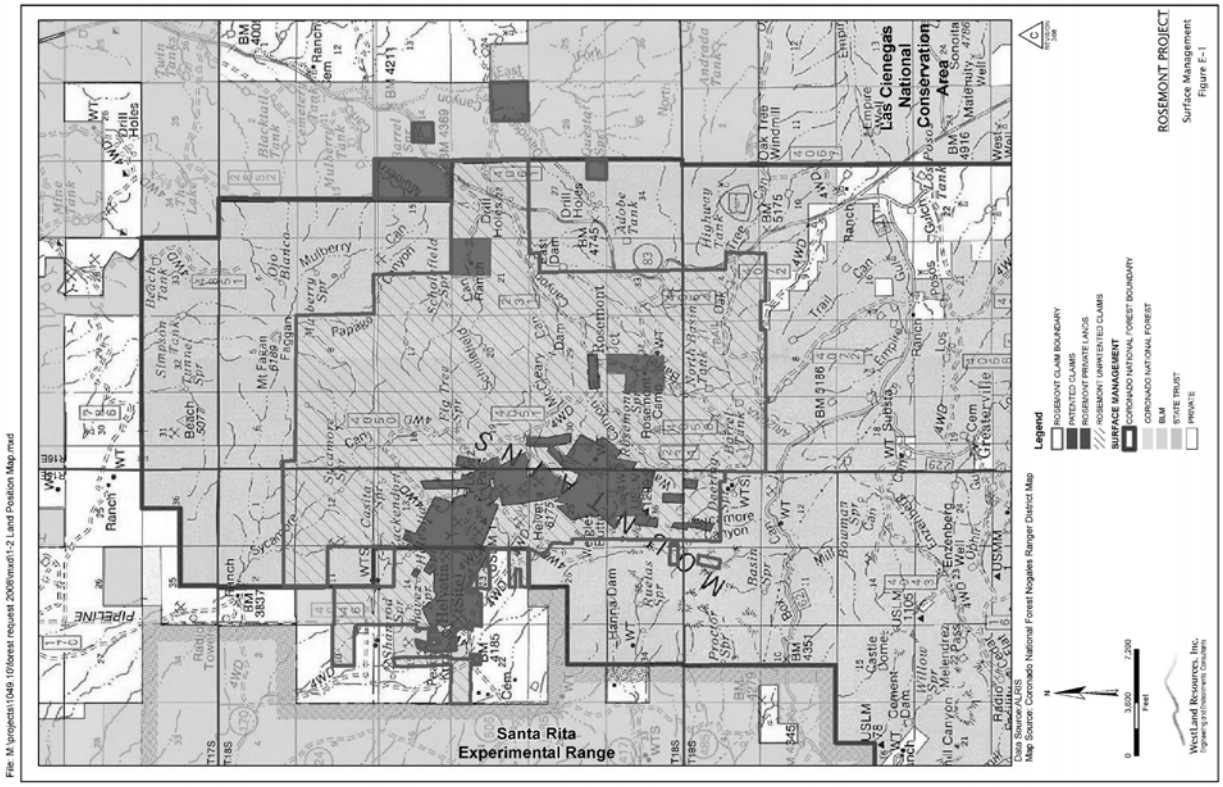
RECLAMATION

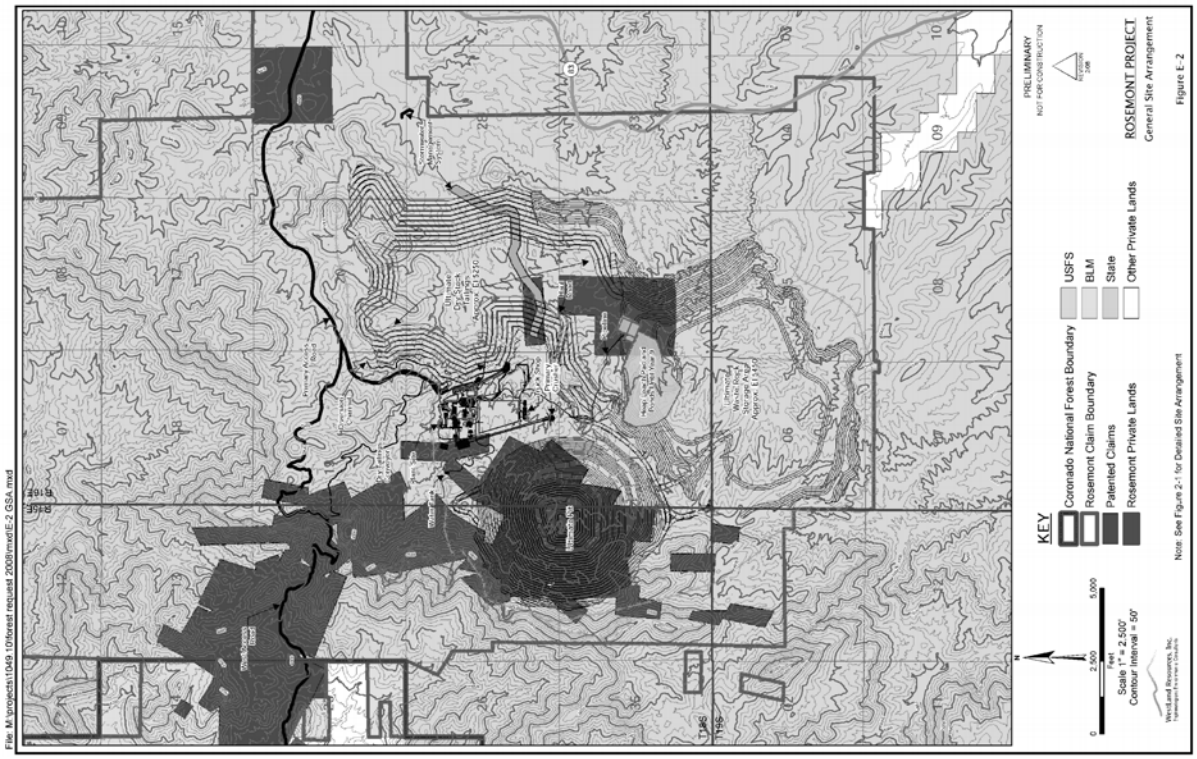
The Project was designed from its inception to facilitate state-of-the-art reclamation practices, including greenhouse studies to determine optimum plant species for re-vegetation, utilization of cattle to prepare the seedbed for re-vegetation and the construction of perimeter buttresses with 3H:1V slopes to stabilize soils and enhance re-vegetation. In addition to employing reclamation practices from the beginning of mining activities, construction of the tailings and waste rock storage facilities will be designed and built to facilitate closure. Significant planning has gone into the staging of facility construction as well as the facility design itself in order to minimize the footprint of the mine. In addition to limiting facility placement to a single drainage, visual impacts of the site, both during operations and at closure, were also considered in the mine's overall design. As much as practicable, perimeter buttresses are staged around the facility footprint to minimize the visual impact of both construction and operation from SR-83.

Operationally, a water-conserving methodology known as dry-stack tailings will be used at the site to significantly reduce water usage issues, which is of paramount concern in the arid Southwest. The placement of tailings behind a thick waste rock shell (starter buttress) eliminates the possibility of off-site migration of contaminated stormwater, as well as minimizing any potential for downward migration of interstitial tailings water as in conventional tailings disposal systems.

A fully-lined heap leach operation is proposed as part of the Rosemont MPO closure reclamation plan. At closure, the lined heap and associated ponds will be covered by up to 50 ft of waste rock. The Rosemont MPO/Reclamation plan is a model for modern day sustainable, responsible copper mining.

Figures


Santa Rita
Experimental Range
Las Cienegas
National
Conservation
Area
Legend
ROSEMONT CLAIM BOUNDARY
PATENTED CLAIMS
ROSEMONT PRIVATE LANDS
ROSEMONT UNPATENTED CLAIMS
SURFACE MANAGEMENT
CORONADO NATIONAL FOREST BOUNDARY
CORONADO NATIONAL FOREST
BLM
STATE TRUST
PRIVATE
ROSEMONT PROJECT
Surface Management
Figure E-1
WestLand Resources, Inc.
Engineering & Environmental Consultants
Data Source: ALRIS
Map Source: Coronado National Forest Nogales Ranger District Map
File: M:\projects\10\49.10\forest request 2006\mxd\1-2 Land Position Map.mxd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KEY
Coronado National Forest Boundary
Rosemont Claim Boundary
Patented Claims
Rosemont Private Lands
USFS
BLM
State
Other Private Lands
PRELIMINARY
NOT FOR CONSTRUCTION
ROSEMONT PROJECT
General Site Arrangement
Figure E-2
Scale 1" = 2,500'
Contour Interval = 50'
Note: See Figure 2-1 for Detailed Site Arrangement