

# Rosemont Copper Project EIS

## Cooperating Agency Coordination Meeting 03/18/2010

### Agenda

**Location:** Federal Building, 300 West Congress, Tucson, Arizona, Room 4B

**Facilitator:** Teresa Ann Ciapusci, Cooperating Agency Liaison

#### AGENDA

09:30 – 09:45	<b>Welcome</b> <ul style="list-style-type: none"><li>➤ FAQ homework responses</li></ul>	<b>Ciapusci</b>
09:45 – 10:15	<b>Land Forming</b>	<b>Kriegel</b>
10:15 – 10:45	<b>Plants and Animals</b> <ul style="list-style-type: none"><li>➤ Status designations</li><li>➤ Overview of species under consideration</li></ul>	<b>SWCA</b>
10:45 – 11:00	<b>BREAK</b>	
11:00 – 11:30	<b>Technical Report Review Process</b> <ul style="list-style-type: none"><li>➤ Reports available on <a href="http://www.RosemontEIS.us">www.RosemontEIS.us</a></li><li>➤ Documentation of CA Review of technical reports</li></ul>	<b>Everson</b>
11:30 – 12:00	<b>DEIS Content</b>	<b>Roth</b>

#### INVITED COOPERATING AGENCIES

Tribes: Tohono O'odham Nation  
Federal: Air Force, Army COE, BLM, Smithsonian Whipple Observatory  
State of Arizona: AZDEQ, AZMMR, AZDWR, AZGF, AZGS, AZSMI, AZSLD, AZSP, ADOT  
Local: Pima County, City of Tucson, Town of Sahuarita

#### INVITED GUESTS

Consultants:  
Cheniae & Associates  
SWCA Environmental Consultants

# Rosemont Copper Project EIS

## Cooperating Agency Coordination Meeting 03/18/2010

### Meeting Notes

<b>Welcoming Remarks</b>	<b>Teresa Ann Ciapusci</b>
<b>Land Forming</b>	<b>Debby Kriegel</b>
<p><b>Discussion:</b></p> <p>⇒ Overview of reclamation practices to potentially improve the appearance of waste rock and tailing piles. The interdisciplinary team is exploring the feasibility of this concept as an alternative to the proposed action or as potential mitigation common to all action alternatives. The team's exploration is conceptual at this time. PowerPoint Presentation: Rosemont Mine Landforming</p> <p>⇒ Question and Answer period</p>	
<b>Plants and Animals</b>	<b>Ken Kertell (SWCA Environmental Consultants)</b>
<p><b>Discussion:</b></p> <p>⇒ Overview of process interdisciplinary team and contracted biologists are using to identify the plant and animal species that will be studied in detail in the Draft Environmental Impact Statement PowerPoint Presentation: Plant and Animal Species Considered during Analysis of the Rosemont Copper Project</p> <p>⇒ Question and Answer period</p>	
<b>Technical Report Review Process</b>	<b>Bev Everson</b>
<p><b>Discussion:</b></p> <p>⇒ PowerPoint Presentation: Technical Report Review Handout: Memorandum – Optional Review of Technical Reports for the Rosemont Copper Project</p> <p>⇒ The Forest Service interdisciplinary team leader provided instruction to cooperating agencies regarding documentation of the agencies' review of technical reports that provide the scientific, engineering, and feasibility assessments underlying technical aspects of the Mine Plan of Operation. Reports available for review by cooperating agencies are available on the <a href="http://www.RosemontEIS.us">www.RosemontEIS.us</a> website.</p> <p>⇒ Action Item: Cooperating agency reviews of technical reports are due to the Forest by April 30, 2010.</p>	
<b>DEIS Content</b>	<b>Mindee Roth</b>
<p><b>Discussion:</b></p> <p>⇒ The Forest Service provided a preliminary outline of the DEIS chapters and sections and requested comments be returned to the Forest Service if the table of contents is incomplete with respect to documentation of information needed by cooperating agencies to fulfill agency NEPA regulation or permitting authority needs. PowerPoint Presentation: DEIS Contents (note: technical problem during meeting prevented display of this presentation - the presentation was posted to the project website for cooperating agency access)</p> <p>⇒ Action Item: Cooperating agency comments are due to the Forest Service by April 30, 2010.</p>	

Attendance Record

Cooperating Agencies	Participant(s)
Tohono O'odham Nation	Addison Smith Rosalynde Albaladejo
Air Force, 162d Fighter Airwing	Unavailable – advance notice
Army Corps of Engineers	Unavailable – advance notice
USDI BLM	C. M.
Smithsonian Institution	Dan Brucious
AZ Dept of Environmental Quality	Dennis Turner
AZ Dept of Mines and Mineral Resources	Gaden H. Smith

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

Cooperating Agencies	Participant(s)
AZ Department of Transportation	Charles Beck Todd Gray
AZ Dept of Water Resources	Laura Grignani
AZ Game and Fish Department	Mike Demlong Linda Pollock
AZ Geological Survey	Lee Wilson
AZ State Land Department	David Johnson
AZ State Mine Inspector	
AZ State Parks	
City of Tucson	

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

Cooperating Agencies	Participant(s)
Pima County	<i>Suzanne Shields</i> <i>Julie Fonseca</i> <i>Mark Kuester</i> <i>Nick Miller</i> <i>Loy Neff</i>
Town of Sahuarita	<i>Joe Marquez</i> <i>Orlanthia Henderson</i>

*ADOT*

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

Guests	Affiliation
	G.L. Cheniae and Associates
	SWCA Environmental Consultants

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

Attendance Record

Cooperating Agencies	Participant(s)
Tohono O'odham Nation	Addison Smith Roselynde Alexander
Air Force, 162d Fighter Airwing	Unavailable – advance notice
Army Corps of Engineers	Unavailable – advance notice
USDI BLM	Dan Moore
Smithsonian Institution	Dan Brocious
AZ Dept of Environmental Quality	Dennis Turner
AZ Dept of Mines and Mineral Resources	Madan M. Singh
AZ Department of Transportation	Charles Beck Todd Emery
AZ Dept of Water Resources	Laura Grignano
AZ Game and Fish Department	Mike Demlong Linda Pollock (Arizona Attorney General's Office)
AZ Geological Survey	Lee Allison
AZ State Land Department	David Jacobs
AZ State Mine Inspector	Unavailable – advance notice
AZ State Parks	Unavailable – advance notice
City of Tucson	

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

<b>Cooperating Agencies</b>	<b>Participant(s)</b>
Pima County	Suzanne Shields Julia Fonseca Mark Krieski Nicole Fyffe Loy Neff
Town of Sahuarita	Joe Marques Orlanthia Henderson

**Rosemont Copper Project  
Cooperating Agency Meeting  
March 18, 2010**

Guests	Affiliation
Gordon Cheniae	G.L. Cheniae and Associates
Ken Kartell Geoff Soroka Tom Furgason	SWCA Environmental Consultants

# ROSEMONT MINE LANDFORMING

March 19, 2010

Debby Kriegel  
Landscape Architect  
Coronado National Forest













Can waste rock & tailings be shaped to look more natural?



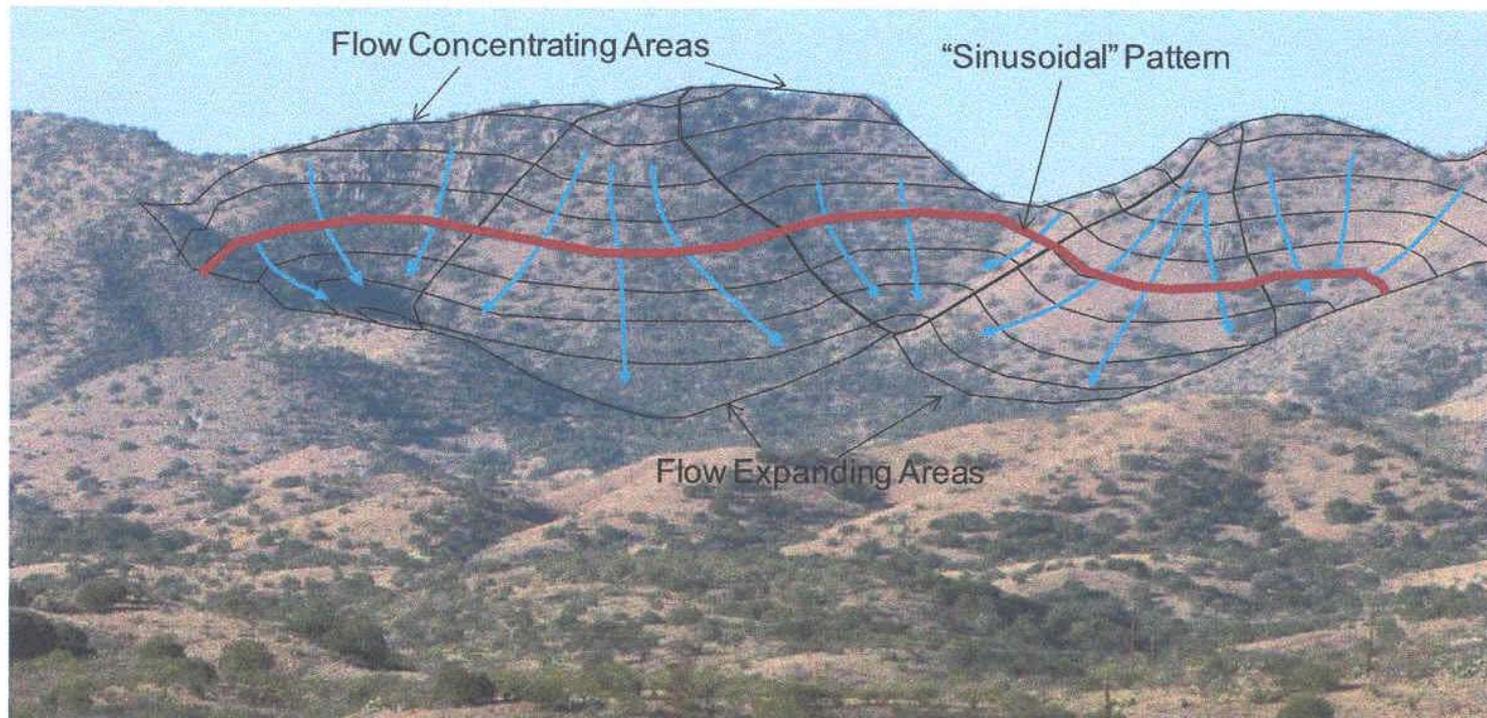
# Landforming

The engineering of natural-looking hill slopes that maintain functionality (i.e., ability to pass runoff from rain events) and stability (i.e., resistance to significant erosion and geotechnical slope failures).

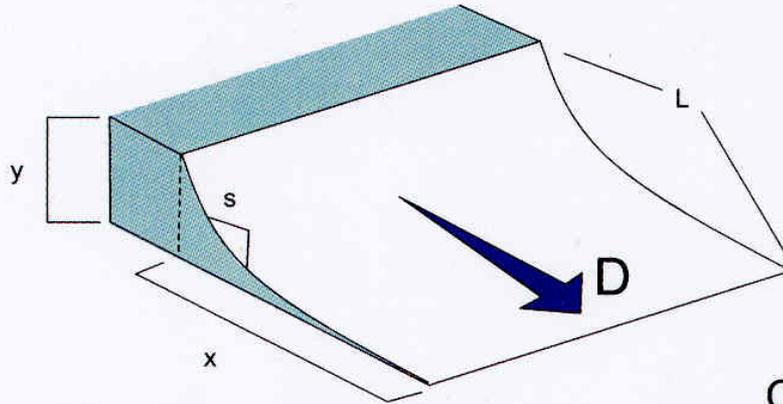
### 3.1 Natural Landscape

Photos from the vicinity of the Rosemont site were analyzed to determine what types of natural landforms were present so that these geometries could be considered in the development of the engineered landforms. Below are some of the key elements observed:

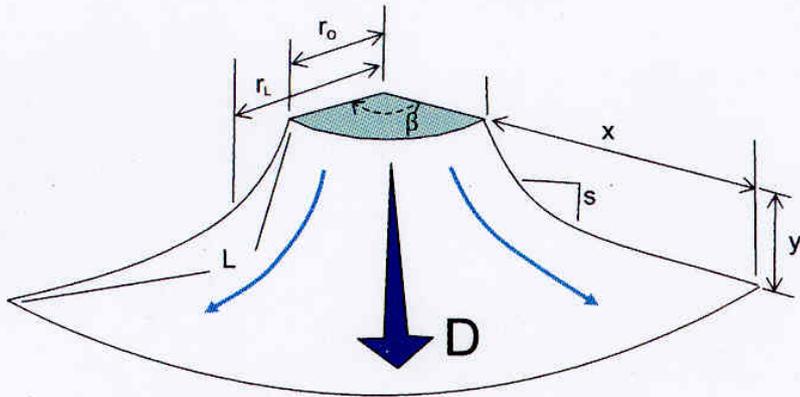
- Irregular ridgelines
- Basins (of varying sizes)
- Flow expanding / flow concentrating areas
- “Sinusoidal” pattern across contours
- Concave slope profiles
- Presence of vegetation on the landforms



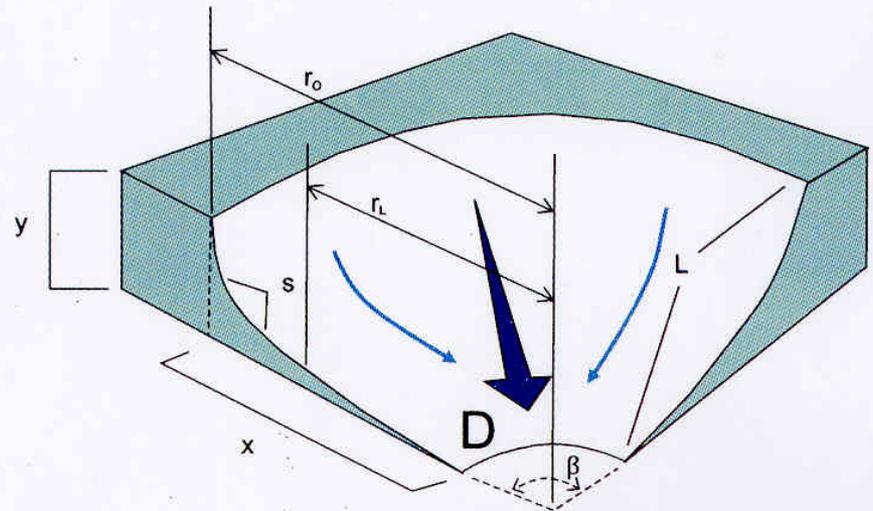
Planar Concave



Expanding Concave

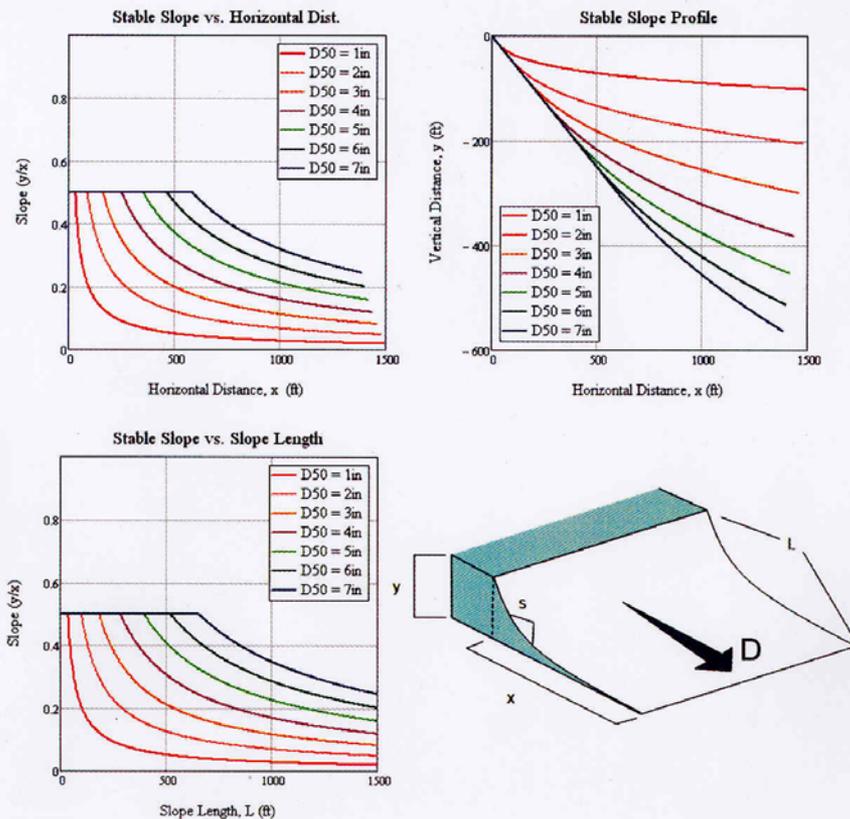


Concentrating Concave



lower left is identical except that the stable slope is plotted versus the length along the slope (not the horizontal length).

**Basin Geometry - Planar Concave Slope**



**Figure 6: Stable slope profiles for planar concave slope.**

The graph on the upper right shows the actual stable slope profile which is essentially a cross-section cut along the slope (not to scale). From this graph it is easy to see the vertical drop achievable for each rock size, keeping in mind that the maximum vertical drop anticipated for the Rosemont waste rock pile is approximately 500 ft. From this, it would appear for a planar concave slope profile, waste rock would need to have a  $d_{50}$  of approximately 5 in (light green line) to 7 in (blue line).

**DRAFT DELIBERATIVE – NOT FOR PUBLIC DISTRIBUTION**



# ROSEMONT ALTERNATIVE LANDFORM PROJECT

Horst J Schor

**DRAFT**

# Objectives

- ▣ To Retain Character of Land after Mine Excavation Placement – YES IT CAN BE DONE
  - Landform or Geomorphic Approach
    - ▣ No Uniform Slopes
    - ▣ No Repetitive , Artificial Undulations
    - ▣ No Large Plateaus
    - ▣ No Abrupt Changes from Man-Made to Natural Topography

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# Design Approach

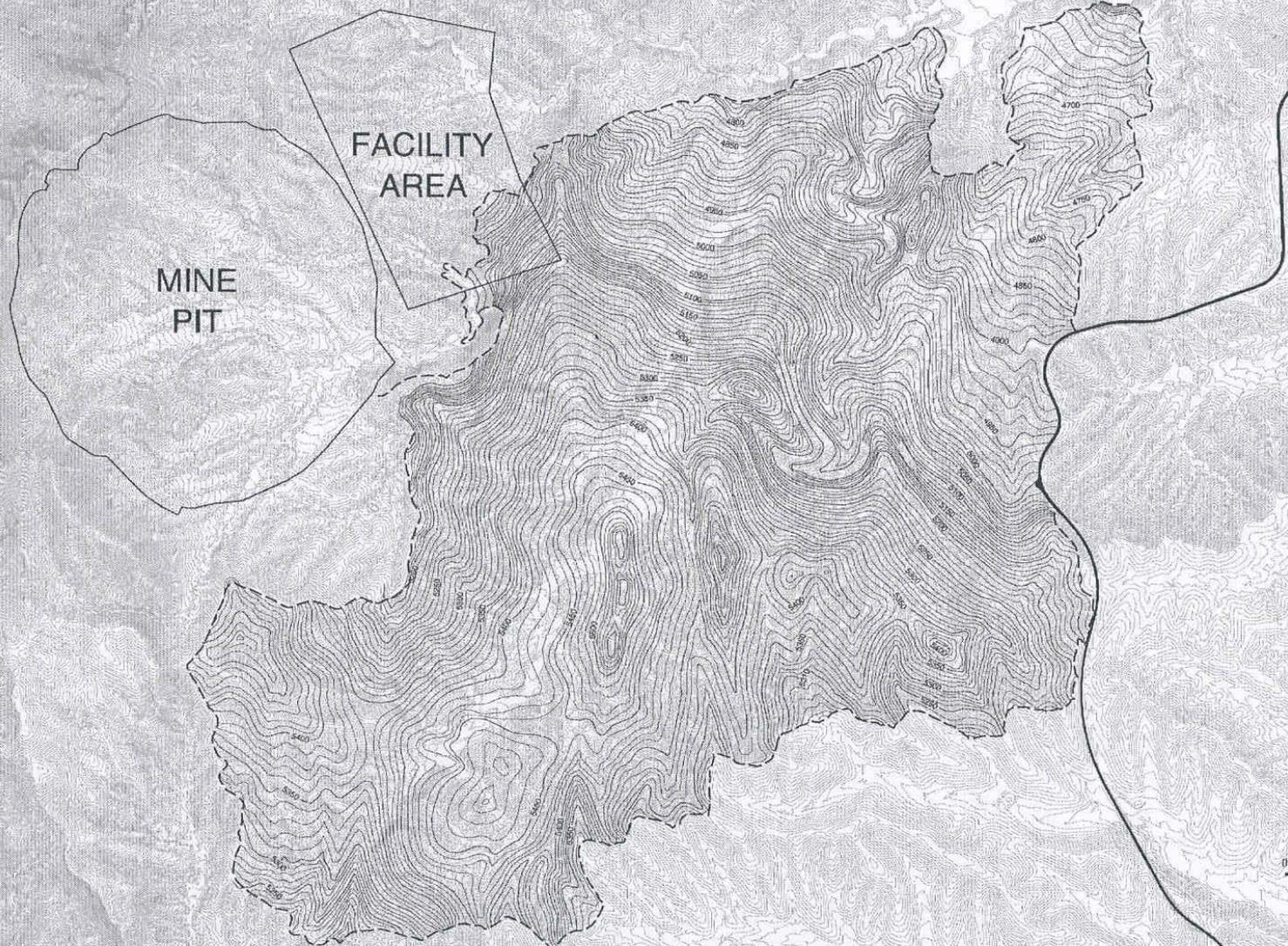
- Design Places Entire 1.2 Billion Cu. Yds in a Geomorphic Fashion
- Design Relationship to Adjacent Topography
- Recreate Barrel Canyon
- Distinctive Ridgeline Replicated
- Use of Rock and Boulders as Ridge Crowns or Ledges
- Use of Rock and Boulders for Flow Reduction
- Solution Needed to Geomorphically Accommodate Waste Rock and Dry Stack Tailings
- Visual Affects From Highway and Trail Considered
- Preserve Views Toward Existing Ridgeline
- Create Variable Runoff Patterns with Side Slopes
- Create Variable Aspects for Re-Vegetation

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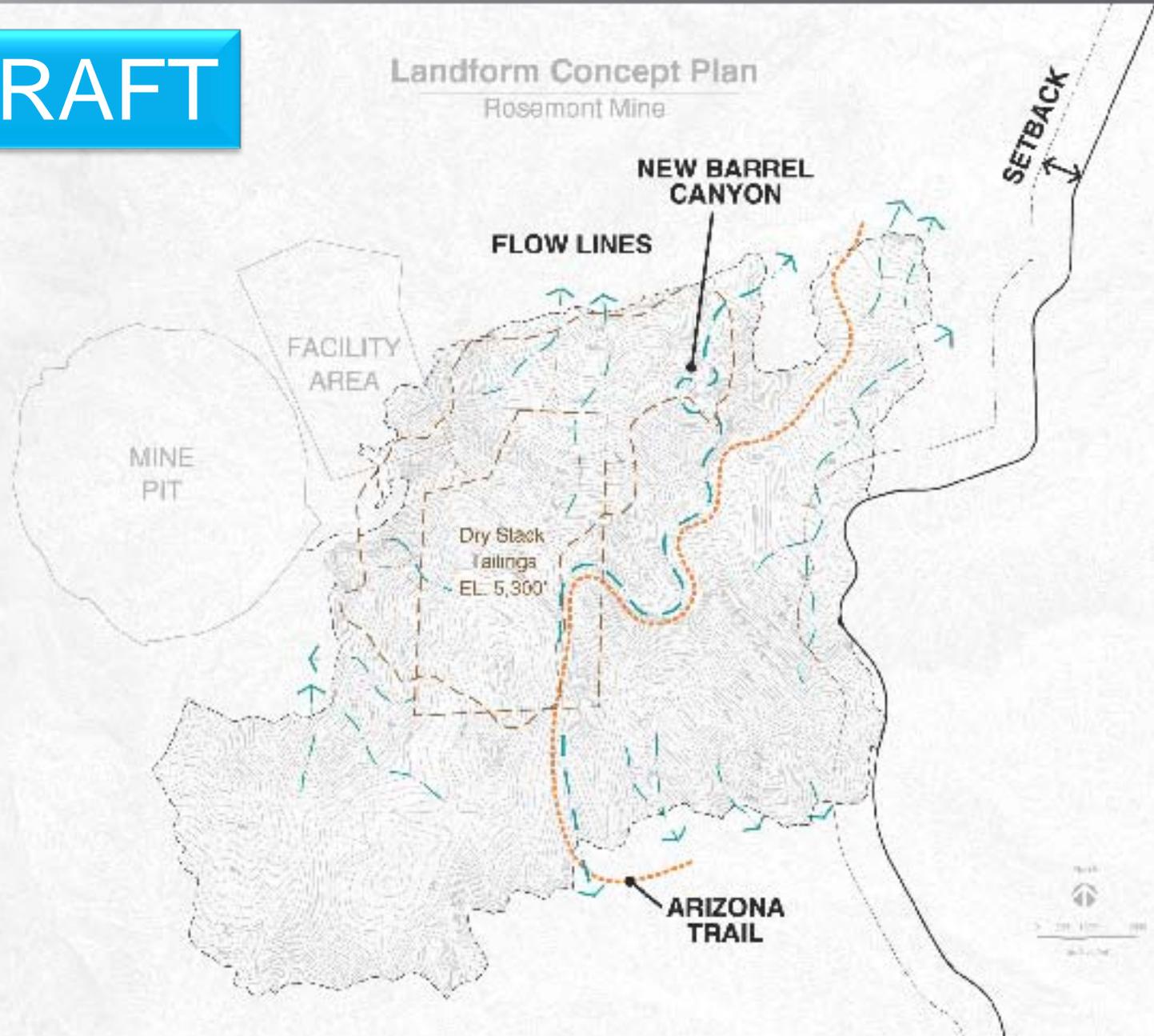
# Landform Concept Plan

## Rosemont Mine

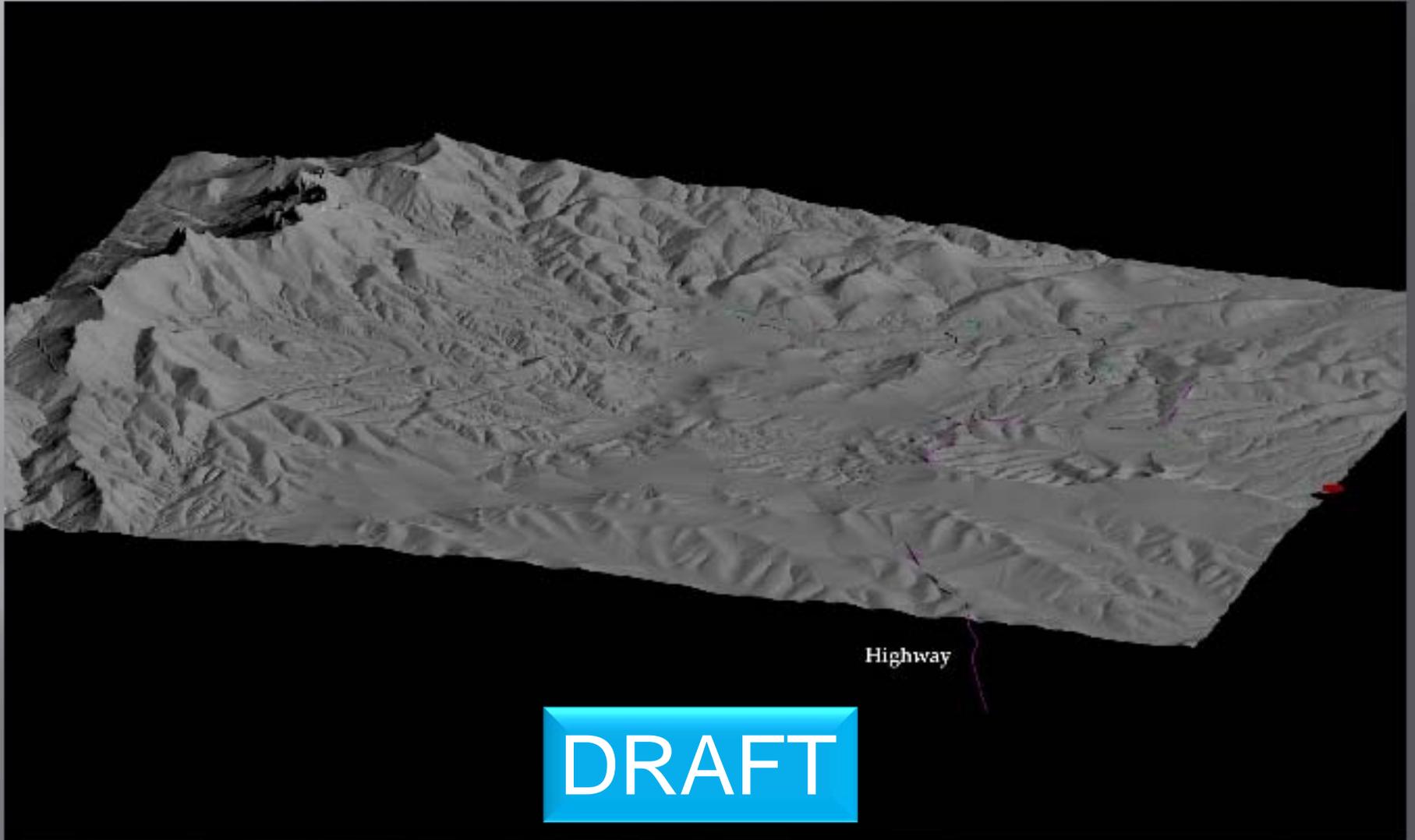


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# Landform Concept Plan Rosemont Mine

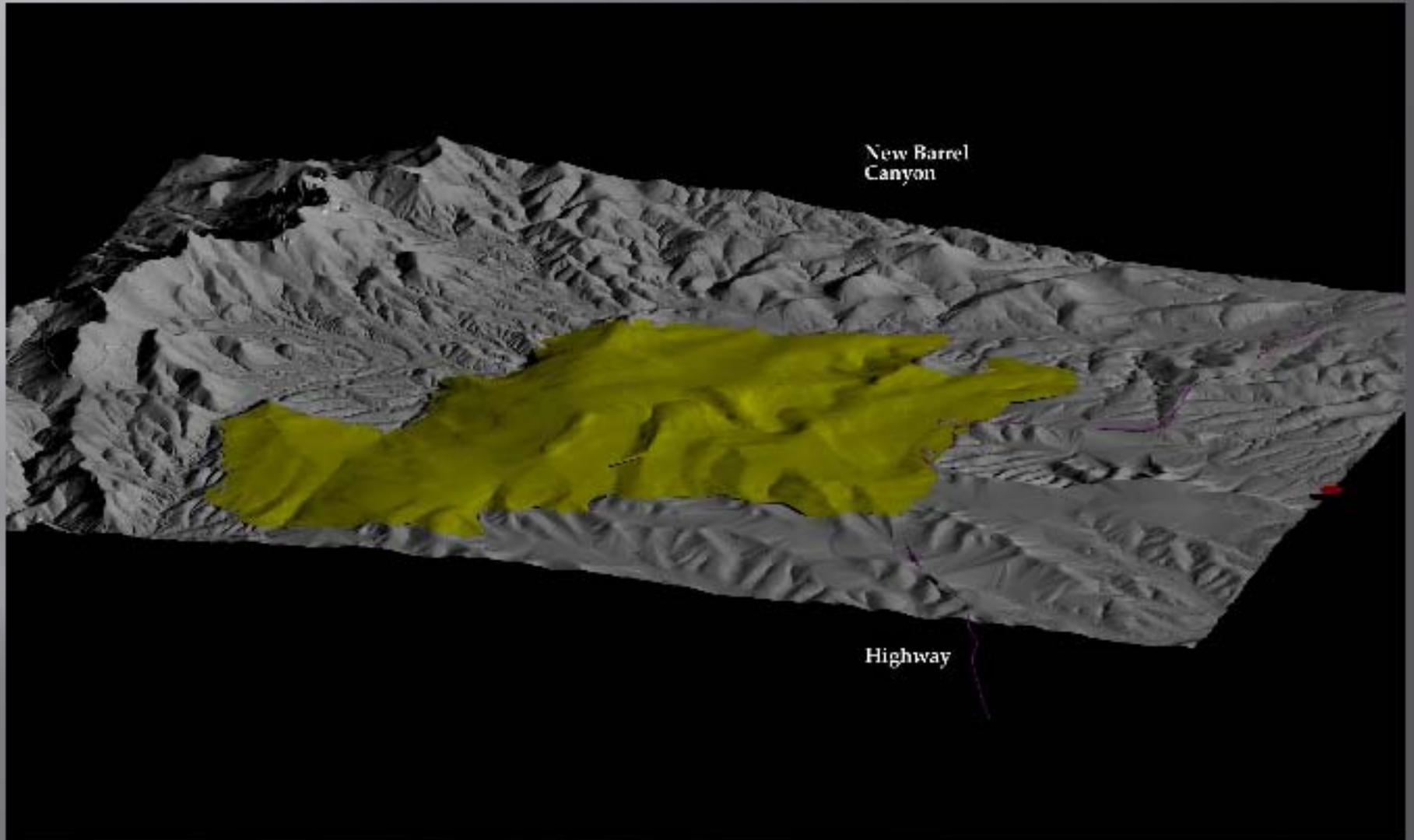


# Birdseye View – Exist. Cond.



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# Birdseye View



# Summary

- ⦿ Landforming on Rosemont Mine is possible
- ⦿ New concept for mine reclamation
- ⦿ Could be mitigation or a new alternative
- ⦿ Major downside is that footprint is larger

**Plant and Animal Species  
Considered during Analysis of the  
Rosemont Copper Project**

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# Special-Status Species

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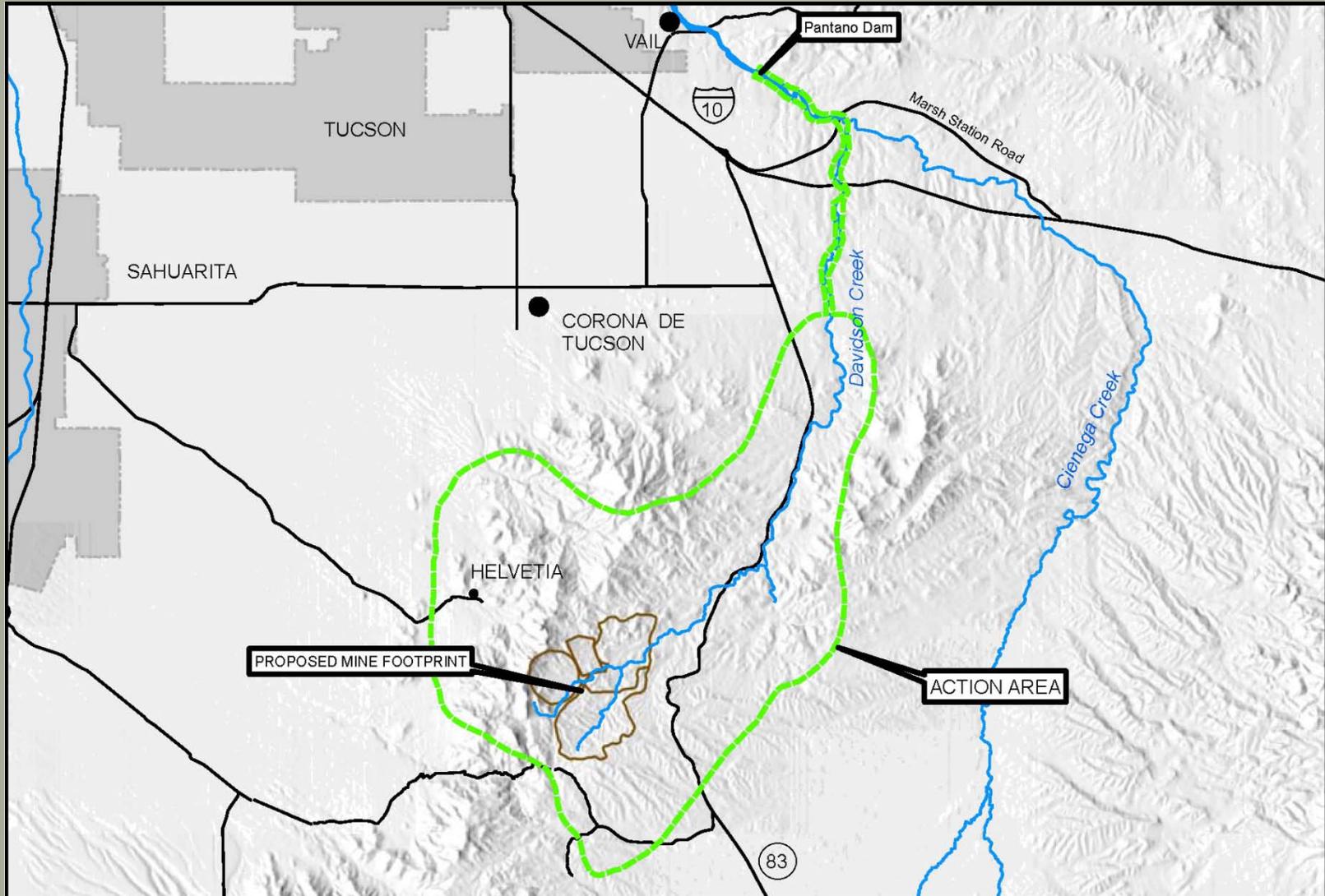
- Endangered Species Act (ESA) Threatened, Endangered, and Candidate
- U.S. Forest Service (Forest Service) Sensitive
- Bureau of Land Management (BLM) Sensitive
- AGFD Wildlife of Special Concern in Arizona (WSCA)
- Forest Service Management Indicator Species (MIS)
- Pima County Priority Vulnerable Species (PVS)
- Migratory Birds
- Other Species
- Wildlife Linkages

# Special-Status Species

Category	Species* Evaluated	Species Addressed in Detail*
Threatened, Endangered, Candidate	30	12
Forest Service Sensitive	161	65
BLM Sensitive	34	15
AGFD WSCA	10	10
Forest Service MIS	34	10
Pima County PVS	29	20
Migratory Birds	105	71
Other Species		3
<b>Total</b>	<b>373</b>	<b>135</b>

\*Some species fall into more than one category.

# Project Area vs. Action Area



# Threatened, Endangered, and Candidate Species Considered

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- Correspondence with Forest Service
- Review of U.S. Fish and Wildlife Service (USFWS) species lists for Pima and Santa Cruz counties
- Arizona Game and Fish Department (AGFD) Heritage Data Management System search
- Meeting with USFWS and Forest Service on August 5, 2009

# Threatened, Endangered, and Candidate Species Evaluated

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- Pima Pineapple Cactus [PPC] (E)
- Lesser Long-nosed Bat (E)
- Chiricahua Leopard Frog [CLF] (T)
- Mexican Spotted Owl [MSO] (T)
- Huachuca Water Umbel (E)
- Gila Chub (E)
- Gila Topminnow (E)
- Southwestern Willow Flycatcher [SWF] (E)
- Jaguar (E)
- Ocelot (E)
- Yellow-billed Cuckoo (C)
- Northern Mexican Gartersnake (C)

# Southwestern Willow Flycatcher

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- From 1996–2007, AGFD conducted SWF surveys along five reaches of Cienega Creek
- Pair and nest located in 2001 in uppermost reach; no records since 2001
- No records or potential habitat in project area

# Northern Mexican Gartersnake



Credit: ©, Jeff Servoss  
Courtesy of USFWS

- Has been recorded in Cienega Creek in action area
- Majority of recent documented records approximately 10 miles upstream of the action area in Las Cienegas National Conservation Area (NCA)
- Results from 2007 and 2008 indicate that the population at the Las Cienegas NCA has declined significantly
- No records or potential habitat in project area

# Pima Pineapple Cactus

- Surveys of proposed waterline routes conducted in 2008 and 2009
- 48 living and 6 dead PPC in 2009
- Portions of 2009 survey route dropped from further consideration, resulting in 36 living and 5 dead PPC in action area



# Chiricahua Leopard Frog



- 2008 – 2 sites with CLF on holdings (one site in project footprint)
- 2006 and 2009 – None recorded on holdings or footprint
- No breeding records in the project area
- Rosemont project area considered a dispersal destination for CLF emigrating from breeding locations to the south; project area occupied only during wet years

# Mexican Spotted Owl

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Photograph by Bill Radke, US Fish and Wildlife Service

- No documented MSO records or Protected Activity Centers (PACs) in the project area
- All known PACs at least 4.8 miles southwest of project area
- MSO Critical Habitat 3.4 miles southwest of project area

# Lesser Long-nosed Bat

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Photograph by Bill Radke, US Fish and Wildlife Service

- Post-maternity dispersal region
- At least 3 active roosts on or immediately adjacent to project area
- Helena Mine complex on Coronado lands immediately east of project area an important roost site (5,000+ bats)

# Huachuca Water Umbel

- “Small” population discovered in 2001 along Cienega Creek in the Cienega Creek Nature Preserve immediately upstream of the confluence of Davidson Canyon
- Population now gone
- No records or potential habitat in project area



Photograph by Bill Radke, US Fish and Wildlife Service

# Gila Chub and Gila Topminnow

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- Gila chub reported in small numbers in Cienega Creek Nature Preserve upstream of Davidson Canyon
- Gila topminnow reported in relatively large numbers in the action area and elsewhere in Cienega Creek Natural Preserve
- No records or potential habitat in project area



# Yellow-billed Cuckoo

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- Three detected calling along lower Cienega Creek at the “Davidson Canyon confluence;” no nest found
- No records or potential habitat in project area

# Jaguar

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- Three records for Santa Rita Mountains prior to 1920
- No ocelot records



Talusnail  
(*Sonorella* spp.)

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**MEMORANDUM**

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**TO:** Rosemont Copper Project Cooperating Agencies  
**FROM:** Beverley Everson, Interdisciplinary Team Leader  
**SUBJECT:** Optional Review of Technical Reports for the Rosemont Copper Project  
**DATE:** 3/18/2010  
**CC:** Teresa Ann Ciapusci, Cooperating Agency Liaison

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Attached is a list of the technical reports the Forest Service has received to date for the Rosemont Copper Project environmental study. These reports are available for cooperating agency review on the project Internet website, [www.RosemontEIS.us](http://www.RosemontEIS.us). By this memorandum, I am inviting and encouraging cooperating agencies to provide the Forest Service a written statement documenting your agency's review of those technical reports that discuss information within the jurisdiction and specialized experience documented in your Memorandum of Understanding for cooperating agency status. Please document completion of your review and comments in writing on your agency letterhead addressed to the Rosemont Copper Project Cooperating Agency Liaison, Teresa Ann Ciapusci.

Although I welcome any information your agency chooses to submit about the technical reports, I am particularly interested in comments that: (1) describe your agency's assessment of how well the technical report meets the purpose of the analysis or scientific review of its subject matter, (in other words, how well does it answer the study question) (2) your agency's professional critique of the study's analytical method or evaluation results and conclusions, (3) your agency's recommendations for further study needed to achieve the report's intended disclosures, and (4) documentation of additional resources that support or oppose the conclusions in the technical reports.

Please submit your written reviews by April 30, 2010.

BEVERLEY EVERSON  
Interdisciplinary Team Leader  
Rosemont Copper Project

**Rosemont Copper Project  
Technical Reports**

Resource Report Name	Author	Report Date
<b>Air</b>		
Ambient Air Quality and Meteorological Data	Applied Environmental Consultants	04/08/2009
Modeling AERMOD Protocol to Assess Ambient Air Quality Impacts	Applied Environmental Consultants	10/30/2009
Modeling CalPuff Protocol to Assess Impacts on Class I Areas	Applied Environmental Consultants	10/30/2009
<b>Biology</b>		
2007 Bio Resources & Mitigation Concepts	Westland Resources	05/01/2007
2008 Rapid Survey of the Rosemont Holdings and Vicinity	WestLand Resources	04/24/2009
2009 Pima Pineapple Cactus Survey: Proposed Rosemont Project Santa Rita Road Waterline	Westland Resources	12/18/2009
2009 Rapid Survey of the Rosemont Holdings and Vicinity	Westland Resources	12/21/2009
Agave Survey	WestLand Resources	03/11/2009
Bat Survey	WestLand Resources	03/11/2009
Management Indicator Species Report	SWCA	12/31/2009
Migratory Bird Analysis, Rosemont Copper Drilling Project, Nogales Ranger District, Coronado National Forest [chapter from larger report?]	SWCA	04/27/2009
Rosemont Holdings 2009 Bat Roost Survey	Westland Resources	12/18/2009
Waterline Pima Pineapple Cactus Survey	WestLand Resources	03/11/2009
<b>Facilities</b>		
Conceptual Heap Leach Pad Design Layout	Vector/TetraTech	06/01/2006
Disposition of Existing Mine Workings	Augusta Resource	11/28/2007
Dry Tailings Facility Design	Tetra Tech	06/01/2007
Leaching Facilities Design Report	Tetra Tech	06/01/2007
Process Water Pond, Temporary Storage Pond, and Settling Basin Design Report	M3 Engineering & Technology	05/01/2009
Rosemont Heap Leach Facility Permit Design Report Volumes I and II	Tetra Tech	05/12/2009
Staging Areas for Pre-Production	M3 Engineering & Technology	11/13/2007
Temporary Shut-down procedures	Tetra Tech	11/12/2007
Waste Management Plan	Tetra Tech	06/01/2007
Waste Rock Facility designs	Tetra Tech	11/28/2007

<b>Resource Report Name</b>	<b>Author</b>	<b>Report Date</b>
<b>Geology</b>		
Alternative Geochemistry Report- Barrel & McCleary	TetraTech	12/16/2009
Alternative Geochemistry Report- Barrel Only	TetraTech	01/10/2010
Alternative Geochemistry Report- Partial Backfill	TetraTech	01/10/2010
Alternative Geochemistry Report- Scholefield & McCleary	TetraTech	01/10/2010
Alternative Geochemistry Report- Sycamore & Barrel	TetraTech	01/10/2010
Baseline Geochemical Characterization	Tetra Tech	06/01/2007
Draft Policy for the Evaluation of Mining Rock Materials for the Determination of Inertness	ADEQ	01/01/1999
Geochemical Characterization. Addendum 1	Tetra Tech	11/01/2007
Geologic Hazards Assessment	Tetra Tech	06/01/2007
Geology & Seismotectonic Review of Mine Siting Study	Vector/TetraTech	04/20/2006
Geotechnical Addendum Volumes 1, 2, and 3,	Tetra Tech	02/01/2009
Geotechnical Study Assessment	Tetra Tech	06/01/2007
Preliminary Trip Report & Phase 1 Sampling & Analysis Plan	Vector/TetraTech	07/26/2006
<b>Hazardous Materials</b>		
Hazardous and Industrial Materials and Quantities	Tetra Tech	11/28/2007
<b>Night Skies</b>		
Lighting Memorandum- Barrel & McCleary	M3	12/30/2009
Lighting Memorandum- Barrel Only	M3	12/30/2009
Lighting Memorandum- Scholefield & McCleary	M3	12/30/2009
Lighting Memorandum- Sycamore & Barrel	M3	12/30/2009
Outdoor Lighting and Pima County Outdoor Lighting Code	M3 Engineering & Technology	06/01/2009
<b>Noise</b>		
Background Ambient Noise Study	Tetra Tech	10/01/2008
Noise Report- Barrel & McCleary	TetraTech	01/09/2010
Noise Report- Barrel Only	TetraTech	01/15/2010
Noise Report- Partial Backfill	TetraTech	01/23/2010
Noise Report- Scholefield & McCleary	TetraTech	01/15/2010
Noise Report- Sycamore & Barrel	TetraTech	01/15/2010
Supplemental Noise Study	Tetra Tech	04/01/2009
<b>Reclamation</b>		
Greenhouse Studies - Phase II Prelim Report	U of A (Jeffrey S. Fehmi)	03/12/2008

<b>Resource Report Name</b>	<b>Author</b>	<b>Report Date</b>
Greenhouse Studies- Phase 1 Final Report	U of A	07/06/2007
Greenhouse Studies- Phase 2 Final Report	U of A	12/18/2008
Reclamation & Closure Plan	Tetra Tech	06/01/2007
Soil Salvage Estimates-Operational Areas	Tetra Tech	06/01/2007
Storage Area Soil Salvage Estimates	Tetra Tech	06/01/2007
Survey of Salvage Topsoil Resources	Tetra Tech	06/01/2007
<b>Socioeconomics</b>		
Feasibility Study Volume I Technical Report	M3 Engineering & Technology	08/24/2007
Preliminary Economic Assessment	Washington Group Intl	06/13/2006
Study of Mineral Production with Reference to the Rosemont Copper Project	AZ Dept of Mines & Minerals	07/01/2009
The Impact of the Rosemont Mine on the Economies of Pima County, Arizona, and the United States	WEAC	08/20/2007
<b>Tails</b>		
Dry Stack Tailings Storage Facility Final Design Report	AMEC	04/01/2009
Filtered Tailings Dry Stacks Current State of Practice	AMEC	11/01/2008
Tailings Siting Study	Vector/TetraTech	05/26/2006
<b>Transportation</b>		
Roadway Assessment	Tetra Tech	07/01/2009
Rosemont Traffic Study- Additional Scenarios	TetraTech	02/23/2010
State Route (SR) 83 Scenic Road Evaluation	Tetra Tech	05/11/2009
Traffic Analysis Report	Tetra Tech	04/01/2009
Traffic Report- Barrel & McCleary	TetraTech	01/10/2010
Traffic Report- Barrel Only	TetraTech	01/10/2010
Traffic Report- Partial Backfill	TetraTech	01/10/2010
Traffic Report- Scholefield & McCleary	TetraTech	01/12/2010
Traffic Report- Sycamore & Barrel	TetraTech	01/10/2010
<b>Visual</b>		
Landforming Report	Golder Associates	02/17/2010
Rosemont Copper Project KOP Viewshed Analysis	Tetra Tech	12/31/2009
Viewshed Analysis	Tetra Tech	06/29/2007
Viewshed Analysis- Barrel McCleary	TetraTech	03/08/2010
Viewshed Analysis- Barrel Only	TetraTech	03/08/2010
Viewshed Analysis- MPO	TetraTech	03/08/2010

<b>Resource Report Name</b>	<b>Author</b>	<b>Report Date</b>
Viewshed Analysis- Partial Backfill	TetraTech	03/08/2010
Viewshed Analysis- Scholefield & McCleary	TetraTech	03/08/2010
Viewshed Analysis- Sycamore & Barrel	TetraTech	03/08/2010
<b>Water</b>		
Comparison of Natural Fluctuation to Draw Down	Montgomery & Assoc	03/01/2010
Conceptual Groundwater Model	Errol Montgomery & Assoc	11/01/2007
Dewatering for the Planned Rosemont Mine	Call & Nichols	11/16/2007
Geochemical Pit Lake Predictive Model	TetraTech	02/01/2010
Groundwater Flow Modeling Conducted for Simulation of Rosemont Copper's Proposed Mine Supply Pumping Sahuarita, Arizona	Errol Montgomery & Assoc	04/30/2009
Groundwater Modeling Conducted for Simulation of Proposed Rosemont Pit Dewatering & Post-Closure	Montgomery & Assoc	10/28/2009
Groundwater Monitoring Program	Errol Montgomery & Assoc	02/13/2008
Groundwater Protection Plan	Tetra Tech	06/01/2007
Groundwater Well Information Tech Memo	Errol Montgomery & Assoc	11/02/2007
Hydrogeologic Investigations & Monitoring Phase 2	Errol Montgomery & Assoc	02/26/2009
Hydrology Method Justification	Montgomery & Assoc	01/27/2010
Infiltration, Seepage, Fate & Transport Modeling Report	TetraTech	02/01/2010
Multi Well Aquifer Test Analysis	Montgomery & Assoc	05/21/2009
Preliminary Groundwater Monitoring Program for Rosemont Mine	Errol Montgomery & Assoc	11/05/2007
Preliminary Springs Assessment	WestLand Resources	12/03/2007
Results of Construction, Development, and testing for Exploration Water Well (D-17-14)17bdd[E-1], Pima County, Arizona	Errol Montgomery & Assoc	04/27/2007
Rosemont Ridge Perimeter Stormwater Retention Basins	Tetra Tech	11/28/2007
Rosemont Stream Classification	Tetra Tech	11/19/2007
Site Water Management Plan	Tetra Tech	06/01/2007
Siting Study- Pond Sizing	Vector/TetraTech	06/02/2006
Storm and Precipitation Data/Design Criteria	Tetra Tech	04/07/2009
Stormwater Assessment- Barrel & McCleary	TetraTech	03/05/2010
Stormwater Assessment- Barrel Only	TetraTech	03/05/2010

<b>Resource Report Name</b>	<b>Author</b>	<b>Report Date</b>
Stormwater Assessment- MPO	TetraTech	03/05/2010
Stormwater Assessment- Partial Backfill	TetraTech	03/05/2010
Stormwater Assessment- Scholefield & McCleary	TetraTech	03/05/2010
Stormwater Assessment- Sycamore & Barrel	TetraTech	03/05/2010
Water Balance Plan	M3 Engineering & Technology	06/01/2007
Water Supply Pipeline Design	Stantec	01/01/2007
Water Supply Project Design Concept Report	Stantec	07/14/2009
Water Well Results Report RC-2	Errol Montgomery & Assoc	04/24/2009

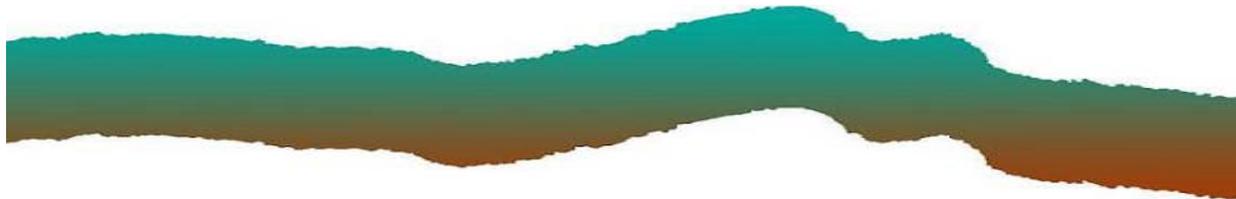
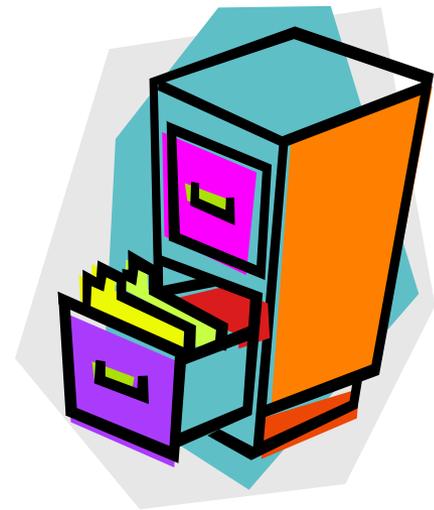
# **Rosemont Copper Project**



**Cooperating Agencies Meeting  
Technical Report Review  
March 18, 2010**

**Reports are located at  
the Internet website,**

**[www.RosemontEIS.us](http://www.RosemontEIS.us)**



# Report categories include:

*Air*

*Biology*

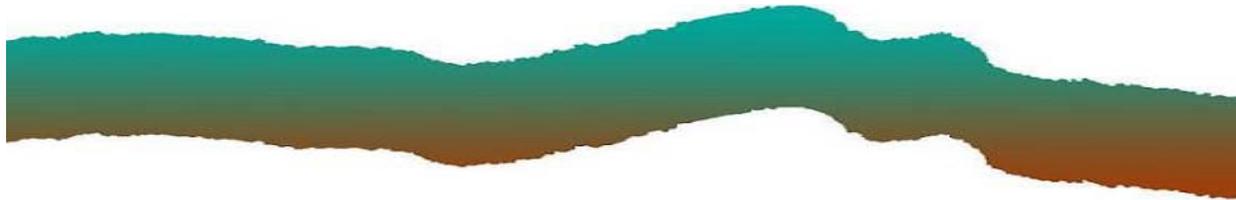
*Corporate*

*Economics*

*Facilities*

*Geology*

*HAZMAT...*



**and,**

***MPO***

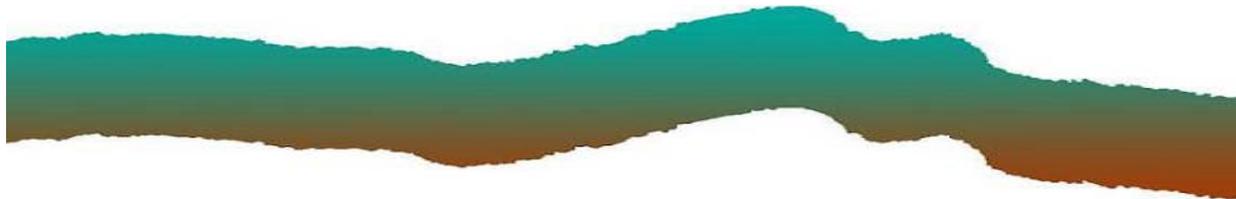
***Night Skies***

***Noise***

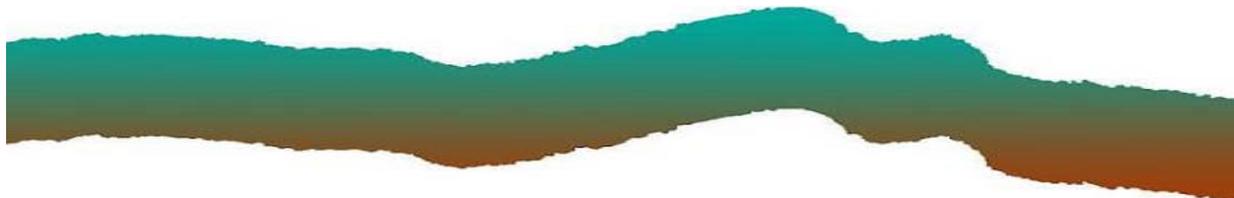
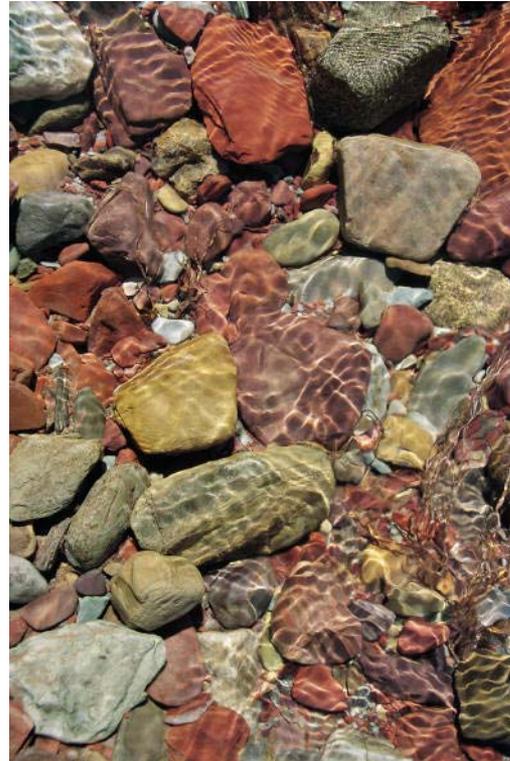
***Reclamation***

***Socioeconomics***

***Tailings,***



*Transportation*  
*Utilities*  
*Visual*  
*Water*

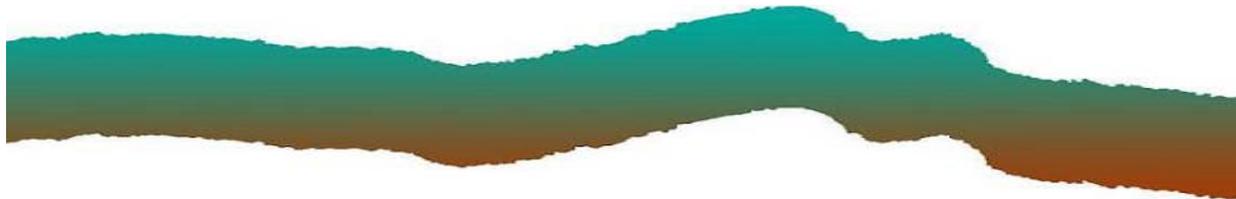


**Review reports per your agency's:**

***Jurisdiction, and***

***Specialized experience***

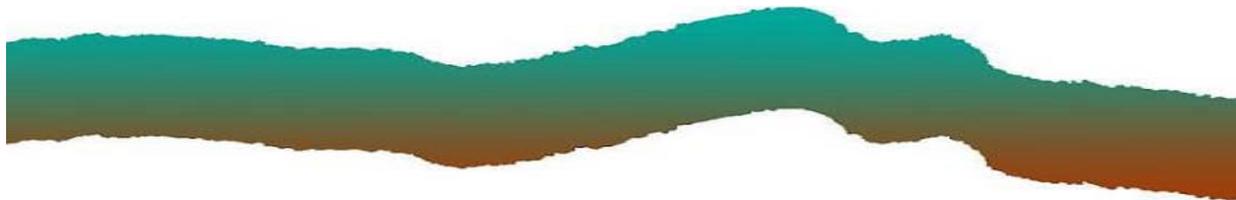
**As documented in your Memorandum  
of Understanding for cooperating  
agency status**



**REVIEW IS OPTIONAL; however, those reviewing, should describe your assessment of how well the report:**

*Meets it's objective*

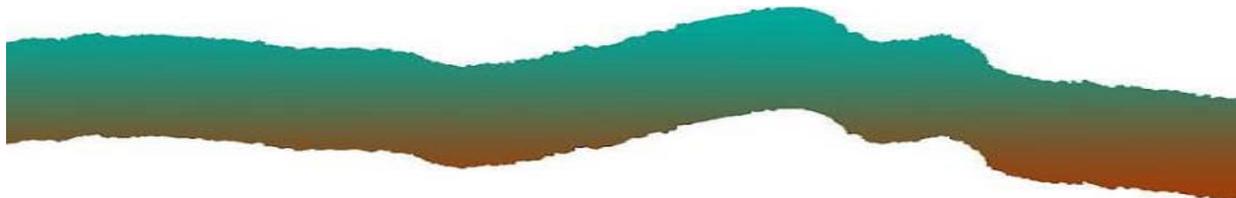
*Uses an effective analytical method or methods, and reaches reasonable conclusions*



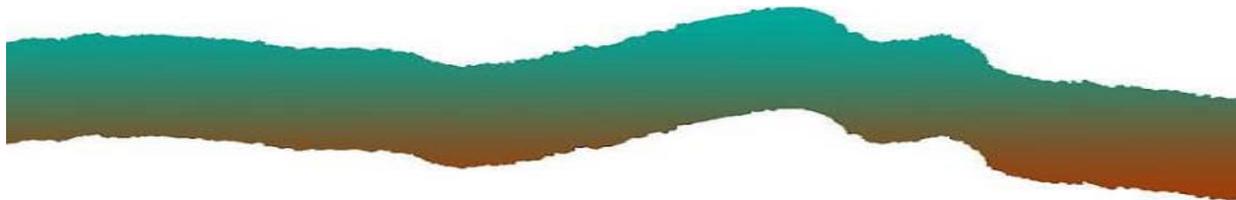
**Review comments should also:**

*Describe your agency's  
recommendations for further study  
and/or information gathering*

*Include documentation of additional  
information that supports or opposes  
the technical report conclusions*



**Review comments  
should *offer a solution*  
*to any inadequacies*  
*that are identified in*  
*the reports***





# **Rosemont Copper Project**



## **DEIS Contents**

Presented at Cooperating Agency Meeting

March 18, 2010



# Draft Environmental Impact Statement

## Rosemont Copper Project

- Acronyms and Abbreviations
- Chapter 1 Purpose and Need
- Chapter 2 Alternatives
- Chapter 3 Affected Environment and Environmental Consequences
- Chapter 4 Agencies Consulted
- Chapter 5 List of Preparers
- Chapter 6 Literature Cited
- Chapter 7 Glossary
- Appendices



# Chapter 1

- Introduction
- Document Structure
- Background
- Purpose and Need for Action
- Proposed Action
- Decision Framework
- Public Involvement
- Issues
- Other Related Efforts



Chapter 1

# Purpose and Need for Action

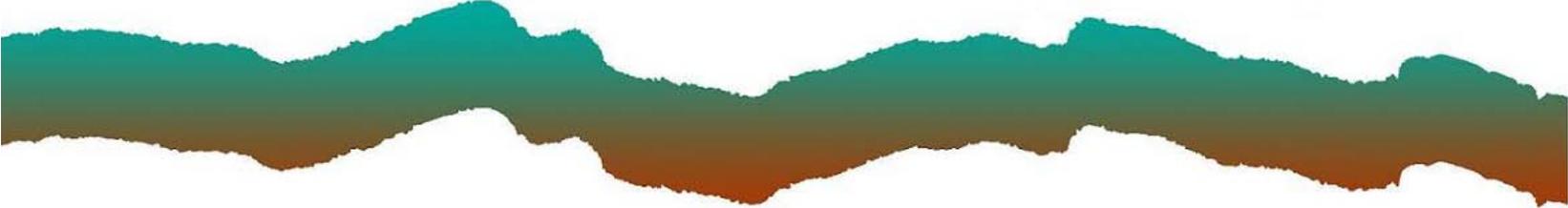
- Notice of Intent
- Clarification regarding the rights of mining claimants
- Laws, regulations, and policies



Chapter 1

# Proposed Action

- Land ownership and acreage
- Construction, operation, and reclamation
- Production products and volumes
- Ore processing plant, waste, tailings, leach
- Infrastructure
- Road use, construction, and maintenance
- Reclamation, monitoring



Chapter 1

# Decision Framework

- Forest Service
- Bureau of Land Management
- U.S. Army Corps of Engineers



Chapter 1

# Issues

- Impact on Land Stability and Soil Productivity
- Impact on Water Resources
- Impact on Springs, Seeps, and Riparian Habitats
- Impact on Plants and Animals
- Impact on Air Quality
- Impact on Visual Resources



Chapter 1

# Issues Continued

- Impact on Recreation
- Impact on Public Safety
- Impact on Dark Skies and Astronomy
- Impact on Heritage Resources
- Socio-Economic Impacts



# Chapter 2

- Introduction
- Summary of the Alternative Development Process
- Alternatives Considered in Detail
  - No Action
  - Proposed Action
  - Other Alternatives
- Alternatives Considered but Eliminated From Detailed Study
- Comparison Table



Chapter 2

# Common Elements

- Pit
- Water Supply
- Utilities
- Blasting and Drilling
- Waste Rock and Tailings
- Ore, Waste Transport
- Solid, Hazardous Waste
- Reclamation, Closure
- Design Features
- Mitigation
- Monitoring



Chapter 2

# Proposed Action

- Footprint
- Phasing of Activities
- Specific Mitigations
- Additional items needed for Implementation
- Monitoring
  - Rationale, Effectiveness, Cost
- Forest Plan Amendment



Chapter 2

# Each Alternative in Detail

- Primary Issues Addressed
- Footprint
- Phasing of Activities
- Specific Mitigations
- Additional items needed for Implementation
- Monitoring
  - Rationale, Effectiveness, Cost
- Forest Plan Amendment



# Chapter 3

- Introduction
- Physical Environment
  - Geology and Minerals
    - Landforms, Soils, and Reclamation
    - Water Resources
- Biological Environment
  - Vegetation and Habitats
- Air Quality
- Social Environment
  - Visual
  - Recreation
  - Public Safety
  - Light, Noise, Vibration
  - Heritage Resources
  - Socio-economics
  - Environmental Justice



Chapter 3

# Introduction

- Chapter organization
- Relevant information about mining that will inform all sections
- Santa Rita Mountains
  - General Geography
  - Climate
  - Topography
  - Main place names
  - Communities
  - Land Uses
  - Overall management direction



Chapter 3

# Example

- Physical Environment
  - Geology and Minerals
    - Introduction
      - Issues, Cause and Effect Relationships of Concern
      - Summary of Effects by Issue Measure by Alternative
      - Analysis Methodology, Assumptions, Uncertainties, Unknowns
    - Affected Environment
      - Relevant Laws, Regulation, Policies, and Plans



## Chapter 3

# Example Continued

- Environmental Consequences
  - Impacts Common to all Alternatives
    - » Mitigation Effectiveness and Remaining Effects
    - » Direct, Indirect, Cumulative Impacts
  - Impacts Specific to Each Alternative
    - » Mitigation Effectiveness and Remaining Effects
    - » Direct, Indirect, Cumulative Impacts



# Draft Environmental Impact Statement

## Rosemont Copper Project

- **Acronyms and Abbreviations**
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