



"Marcie Bidwell"  
<mbidwell@swca.com>  
04/21/2010 08:37 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Specialist Report Outline from 3-10-2008

Submitted with the Chap 3 outline task last year.

## **Visual Technical Report**

1. Introduction/Executive Summary
  - a. Purpose of Specialist Report
    - b. Decision to Be Made
2. Proposed Action and Alternatives
3. Issue Summary and Potential Impacts to Visual Resources
  - a. Visual Resources Issue Statement (synopsis from Scoping Report)
    - b. Internal scoping/ Agency analysis factors
    - c. Elements of visual resource management (design considerations)
    - d. Summary of Analysis parameters
1. Regulatory Framework
  - a. USFS Federal Policy and Guidance: Visual Resource Management
    - i. VQOs (manuals, process, etc for each)
      - ii. SIOs
      - iii. Wilderness
  - b. Forest Plan Guidance
    - i. Existing policy
      - ii. Future trends (i.e. current/upcoming Forest Plan process)
  - c. Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - i. Scenic Byway visual resource management
      - ii. Patagonia Scenic Byway Corridor Management Plan
2. Affected Environment
  - a. Existing Landscape Character and Visual Resources (narrative)

- i. Landforms and landscape features
  - ii. Vegetation
  - iii. Color
  - iv. Textures
  - v. Structures & land use
  
- b. Viewsheds, View Corridors, and Sensitive Viewers
  - i. Project Area
    - ii. Communities and Rural Development Areas
    - iii. Santa Rita Mountains
    - iv. Patagonia Scenic Byway
    - v. Wilderness and wilderness study areas
  
- c. Visual Resource Key Observation Points
  - i. Description of key observation point process
    - ii. Selection/representation of key observation points
  
- d. Trends affecting visual resources
  - i. Forest management activities
    - ii. Non-forest (i.e. Rural development)
    - iii. ??
  
- 3. Research- Parameters of Visual Resource Protection and Mitigation (Design Considerations)-
  - a. Mine Reclamation- form, line, texture, massing, etc
    - b. Habitat Restoration-
    - c. Etc
  
- 4. Assessment Methodology and Analysis Process
  - a. Methods
    - b. Data Sources
    - c. Field Inventory
    - d. Regulatory Framework and Forest Plan Evaluation
    - e. Viewshed Analysis using GIS
    - f. Key Observation Points and Viewshed Analysis/Documentation
    - g. Visual Contrast/Modification Analysis for VQOs/SIOs
    - h. Concern level analysis
  
- 6. Environmental Consequences

1. Introduction
  2. Summary of Visual Issues
  3. Indicators and Agents of Change for Visual Resources
- a. Change in modification level not consistent with Forest Plan goals
  - b. Changes requiring Forest Plan Amendment
  - c. Changes affecting Scenic Byway use
4. Alternative 1
  - a. Direct
    - b. Indirect
    - c. Cumulative
5. Alternative 2
  - a. Direct
    - b. Indirect
    - c. Cumulative
6. Commitment of Irretrievable Resources
  7. Consistency with Forest Plan Objectives

Marcie Demmy Bidwell  
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"Marcie Bidwell"  
<mbidwell@swca.com>  
07/20/2010 04:18 PM

To "Krizek, David" <David.Krizek@tetrattech.com>, "Melissa Reichard" <mreichard@swca.com>  
cc "Kathy Arnold" <karnold@rosemontcopper.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>

bcc

Subject RE: Data Technology Transfer - Visual

Hello David,

Thank you for the update. Trent and I are anxiously awaiting the remaining data.

I should also mention that in our strategy meeting with USFS after the data transfer, that the USFS and SWCA agreed that all of the data for supporting simulations is considered final as of July 21 Wednesday COB. At that point the data goes into what I am calling "the lock box" and simulations will proceed with whatever we have (or don't have).

We went over the simulations with the a selection of the FS ID Team. They will present a selection of the scenes on Friday to discuss.

We are going through the data that we brought back from our Tucson visit (thanks again for your time) and checking for consistency. We will report back if we find anything of note.

Thanks  
Marcie

**From:** Krizek, David [mailto:David.Krizek@tetrattech.com]  
**Sent:** Tuesday, July 20, 2010 7:27 AM  
**To:** Melissa Reichard  
**Cc:** Marcie Bidwell; Kathy Arnold  
**Subject:** Data Technology Transfer - Visual

Melissa,

Please find attached the current status of the information needs requested during the Data Technology Transfer meeting on July 16, 2010 (visual needs).

Sincerely,

**David Krizek | Principal**  
Main: 520-297-7723 | Mobile: 520-260-3490 | Fax: 520-297-7724  
Tetra Tech  
3031 West Ina Road | Tucson, AZ 85741 | [www.tetrattech.com](http://www.tetrattech.com)

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"Marcie Bidwell"  
<mbidwell@swca.com>  
04/15/2010 09:08 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject SOW Review and origina Visual Resource Proposal Update

Hello Debby,

Please find attached the Visual Resource Proposal update and SOW review comments.

<<Visual\_Resource\_Proposal\_2010-04-13 Update.pdf>>

As to the SOW, the language in this SOW regarding "minimum budget" was not the assumption that I was working on. I thought I had communicated clearly to Tom and Jamie that the minimum budget would not satisfy the USFS. I had provided a range of options, as Jamie had requested what a baseline NEPA effort might include for comparision. I explained, thoroughly I thought, that minimum would not meet Regional office or Coronado's expectations.

I am contacting Tom to figure out what he received from Rosemont regarding funding and then I will proceed with edits to this document accordingly.

I apologize, I think I may have contributed to the confusion because I gave Tom the budget with the options in it, rather than just the middle ground.

I will report back shortly.  
Marcie

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[www.swca.com](http://www.swca.com) Visual\_Resource\_Proposal\_2010-04-13 Update.pdf

Rosemont EIS - Visual Funding Update 04/14/2010 on Tasks Remaining unfunded outside of 1/28/2010 Visual Simulation Budget and 4/15/2009 DRAFT Strategy for Visual Resource Analysis

Task	Description of Work	SWCA responsibilities	USFS responsibilities	Proposed Completion Date	Associated EIS Timeline Step & Date	Funding Status	Status	Within Current Visuals Contract	Notes
<p>Note: This document summarizes updates on funding for unfunded tasks, responsibilities, and schedule requested by USFS as of 4/15/2009.                      Tasks = Alternatives Analysis funded, BOLD = Simulations Funding (01/28/2010), Regular Form = Not funded 4/14 and no additional request to date.</p>									
19	Conduct site visits of other mine sites to glean best management practices for project proposal	USFS, SWCA and others	Attend site visits as appropriate	Summer 2009			Not funded as of 4/15/2010. While not funded explicitly, M. Bidwell visited San Manuel and Sierra Mine; MDB went to San Manuel with D. Orman for photography	N	
3a	Identify alternate locations to potentially place waste rock and tailings (unless on seldom seen locations with few wildlife, archaeology, and other resource concerns). Consider using a M-Chang-like mapping process.		Provide wildlife and archeology data as needed and review maps		Alternatives		Alternatives Analysis Funding and Horst Schor's alternative	N	Consider visual, wildlife, cultural, watersheds, 4 springs, riparian, recreation sites, TES, access, etc.
3b	Create 3-D computer simulations of existing landscape and proposed mine.		Review simulation		Alternatives		Simulations Change Order	Y	
3d	Prepare a presentation for the workshop to show site analysis and existing conditions, topography, and landscape patterns for workshop. Incorporate products from step 3a and 3b.		Prepare presentation		Alternatives		Alternatives Analysis Funding	N	
3e	Facilitate a workshop with USFS landscape architect, other USFS and SWCA staff (wildlife biologists, hydrologists, recreation specialists, transportation specialist, etc.) and remediation and mining experts (potentially RCC) to generate initial ideas to explore that achieve USFS design goals (visual, vegetation, wildlife, habitat, hydrology, recreation setting, transportation). Potential areas to address: best locations for waste rock and tailings piles; shaping of waste rock and tailings piles; treatment of side slopes; etc. ACTION ITEMS: Reinstatement current resource values and landscape patterns; identify opportunities and constraints for resources; and demonstrate some concepts with simple clay model.	Lead and facilitate workshop	Participate in workshop		Alternatives		Alternatives Analysis Funding	N	Possibly utilize a facilitator to direct the workshop and outcomes. Invitees to the workshop would include specialists with interest in constructively critiquing the proposed action and identifying potential design responses. Possibly develop a rough, quick cardboard model of the Existing Topography and/or Proposed Action (consider paying a student). Consider reshaping pile only within Barro Canyon drainage, but also look for alternatives that would lessen resource impacts. Consider also future roads and trails through the area (including on waste rock piles) after mine is closed.
3f	Explore and refine concepts identified in workshop for alternative placement and shaping of waste rock and tailings piles that better protects and mimics natural landforms and valued landscape character. Explore radically different shaping to avoid the monolithic form, flat top, and even side slopes. Consider options that may benefit wildlife habitat and other resources and those that might mitigate impacts of the pit (such as removing the most visible western edge). If 3-D computer modeling is not sufficient to complete this step, utilize other methods such as a topographic model.	Lead process and complete work. Provide ideas to IOT during discussion of alternatives.	Review and advise. Participate in 3-D computer modeling sessions.		Alternatives		Alternatives Analysis Funding, Horst Schor and Golder drainage studies	N	
3g	Select tentative key viewpoints for simulations. Document these locations with photography and GPS. Prepare "before" images.	Provide draft and final. Site visits as needed.	Review and comment		Alternatives		Simulations Change Order	Y	Consider results of task 3a.
3h	Create one or more 3-D computer simulations of potential landscape forms and refined landscape ideas for the proposed mine including waste rock and tailing pile forms.	Provide 3D model and simulations	Review simulation		Alternatives		Simulations Change Order	Y	
3i	Show results of step 3h to workshop group and get additional feedback.	Host a meeting	Attend meeting		Alternatives		Simulations Change Order	Y	May need to alter simulation and/or create additional simulations following this step.
3j	Prepare Photo Real or artist rendered simulation drawings or video simulation driving down scenic byway and/or other key travelways.	Provide 3D Simulations	Review simulation		Alternatives		Simulations Change Order	Y	RCC may want to consider having a top notch visualization done by a high end company



Melinda D Roth/R3/USDAFS  
07/01/2010 10:03 AM

To Debby Kriegel/R3/USDAFS@FSNOTES, Salek  
Shafiqullah/R3/USDAFS@FSNOTES

cc

bcc

Subject Fw: 6/30 due date for Fermine's input on Barrel alt.

FYI... My attempts to point out schedule pressures to Rosemont...

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

----- Forwarded by Melinda D Roth/R3/USDAFS on 07/01/2010 10:01 AM -----



Sturgess Jamie  
<jsturgess@augustaresource  
.com>  
07/01/2010 09:38 AM

To Melinda D Roth <mroth@fs.fed.us>,  
karnold@rosemontcopper.com

cc Beverley A Everson <beverson@fs.fed.us>, Reta Laford  
<rlaford@fs.fed.us>, tfurgason@swca.com

Subject Re: 6/30 due date for Fermine's input on Barrel alt.

Mindee, Reta, Bev, Tom, Fermin, Kathy A. etal:

I believe the word for the June 30 meeting should have been Rescheduled rather than Cancelled.

The collaborative effort will produce a collaborated work product.

I suggest a conference call soonest possible, and a sit down end of next week, or even the following week to allow review deliberative time.

I accept that this pushes schedules out two weeks.

Best regards,  
Jamie Sturgess

On 7/1/10 9:59 AM, "Melinda D Roth" <mroth@fs.fed.us> wrote:

As it turns out, it's problematic that the 6/30 meeting about the Barrel alternative was cancelled. Debby and Salek have numerous questions about the latest TT map product and I don't believe we have Fermine's input. These delays will delay the alternative description in Chapter 2 and the analysis in Chapter 3. I understand a meeting of the working group is scheduled next week to pin this down, hopefully. I hope to discuss this with Reta before I leave for vacation tonight.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
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**Katherine Arnold**  
<karnold@rosemontcopper.com>  
07/16/2010 12:24 PM

To Clarissa Barraza <cbarraza@rosemontcopper.com>, Debby Kriegel <dkriegel@fs.fed.us>  
cc Marcie Bidwell <mbidwell@swca.com>, David Krizek <david.krizek@tetrattech.com>  
bcc

Subject Hello

History: This message has been forwarded.

Clarissa – meet Debby and Marcie  
Marcie and Debby – this is Clarissa

Clarissa -

Marcie and Debby are working on the building color schemes that would be best so the buildings blend into the background. I told them that you are the keeper of the keys to the details of our EPCM contracts and that you could chat with them regarding the color limitations and specifications. Please expect a call from either Debby or Marcie or both to chat about:

1. Color of the overall buildings – they got the color information you provided but wondered if they could have a choice
2. Possibly setting a color specification for the buildings so that regardless of manufacturer we are purchasing the colors that are most desirable.
3. Other items as necessary

Let me know if you have questions or concerns.

Kathy

**Katherine Ann Arnold, P.E.** | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
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fn; charset=utf-8:Clarissa Barraza  
n; charset=utf-8:Barraza;Clarissa;;;  
adr; charset=utf-8; type=work; type=pref;;; PO Box 35130; Tucson; AZ; 85740-5130;  
label; charset=utf-8; type=work; type=pref: PO Box 35130\nTucson\, AZ  
85740-5130  
tel; charset=utf-8; type=work: (520) 293-1488 ext 7370  
tel; charset=utf-8; type=cell: (520) 310-1404  
email; charset=utf-8; type=internet; type=pref; type=work: cbarraza@rosemontcopper.com  
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url; charset=utf-8; type=work: www.swca.com  
adr; charset=utf-8; type=work; type=pref;;; 515 East College  
Drive; Durango; CO; 81301; United States  
label; charset=utf-8; type=work; type=pref: 515 East College Drive\nDurango\  
CO 81301\nUnited States  
tel; charset=utf-8; type=work: (970) 385-8566  
tel; charset=utf-8; type=work; type=fax: (970) 385-1938  
email; charset=utf-8; type=internet; type=pref; type=other: mbidwell@swca.com  
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Congress; Tucson; AZ; 85701; USA  
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AZ  
85701\nUSA  
email; charset=utf-8; type=internet; type=pref; type=work: dkriegel@fs.fed.us  
end: vcard



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/15/2009 08:38 AM

To "Stephen Leslie" <sleslie@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc "Trent Reeder" <treeder@swca.com>

bcc

Subject RE: Rosemont - Updated Map of Visually Sensitive  
Travelways

History:  This message has been forwarded.

Debby,

Steve's points apply to visual as well. Visual and rec AE was submitted back in June/July.

We definitely will need the GIS layers that you used to create this map to analyse the CL's. Please forward those at your nearest convenience (or have Terry contact Trent).

Thanks,  
Marcie

**From:** Stephen Leslie  
**Sent:** Tuesday, September 15, 2009 9:35 AM  
**To:** Debby Kriegel; Marcie Bidwell  
**Subject:** RE: Rosemont - Updated Map of Visually Sensitive Travelways

Debby,

This looks good. Just so you know, I have already submitted the initial draft affected environment for recreation. I'll keep this information handy for when we respond to any other necessary changes. Have you provided the travelways data in GIS yet? We'll need that in order to quantify miles of travelways that would be impacted by each alternative.

Thanks,  
Steve

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, September 15, 2009 8:06 AM  
**To:** Marcie Bidwell; Stephen Leslie  
**Cc:** Debby Kriegel  
**Subject:** Rosemont - Updated Map of Visually Sensitive Travelways

Attached is an updated map showing Concern Level 1, 2, and 3 travelways for the Santa Rita Mountains. Our original CL map was 10 years old. The Rosemont project inspired me to review this map, discuss it with our district field person, and make a few changes.

CL1 travelways are most sensitive. CL2 are moderately sensitive. CL3 are least sensitive.

Marcie: Please use this as you write the affected environment section for visual quality. I also sent this map to Jimmy Pepper.

Steve: CL1 roads and trails are our most popular recreation routes. This should be useful as you write affected environment for recreation, and possibly will be a good starting point for exploring restoration of road connections/loops post-mine.

Thanks.

## Data Technology Transfer Meeting

July 16, 2010  
Coronado National Forest  
Tetra Tech, Tucson Office

**Attendees:** Debby Kriegel, *USFS Landscape Architect*  
David Krizek, *Tetra Tech*  
Joel Carracas, *Tetra Tech*  
Trent Reeder, *SWCA Environmental Consultants*  
Marcie Bidwell, *SWCA Environmental Consultants, Project Manager*

### AGENDA ITEMS

Topic

#### ACTION ITEMS (*completed items in bold*)

	Action Item	Date Due
Craig /M3	1. Provide Conveyor Dimensions and Facilities – basic heights, diameter, etc and (1) exhibit showing routing and profile, (2) text labels for facilities in CAD, and (3) profile of the mechanical conveyor.	July 16
Brian / Westland	2. Deliver waterline information ( #35, 36, 37).	July 23
David	3. Confirm electrical distribution collocated with Scholefield conveyor location (there is no filter plant).	July 22
Joel	4. Export of the building footprints that can be loaded into GIS.	<b>Completed</b>
Trent/Marcie	5. Look for large footprints to show in diagram (large areas) at the plant site and extrude heights (following highlighted diagram).	July 21
RCC / Kathy	6. Confirm that the large buildings (over 50') can all be painted the chosen structure color. (yes, they can)	<b>Completed</b>
Trent	7. Create a draft of the facilities in 3D with RCC color and circulate.	July 20
Tt / David	8. Provide a basic color or photo of the Sulfide Ore Stockpile material.	July 21
Moose Mountain	9. Provide a haul road for Scholefield to heap leach, facilities and waste rock/tailings pile.	<b>Completed as a line drawing.</b>
David/ Jeff	10. Check for photos of Bolsa quartzite from test pits.	July 19
Clorissa/ Debby	11. Debby to clarify with Clorissa what may be available for colors for the building types (range of values available).	July 21
Craig Hunt/M3	12. Final alignment for Scholefield primary access road to be determined after Arch alignment is determined.	July 23; waiting on SWCA arch
Joel/ Tt	13. Draft a line for perimeter road for MPO, Barrel and <b>Scholefield</b> .	<i>Need MPO and Barrel; Scholefield drafted</i>
David / Kathy	14. Pit security fence for (1) livestock and (2) public safety. May have different reasons during and post – mine. Need for road side and	July 21

	remote side. Need to know materials and dimensions (height, etc).	
Trent / SWCA	15. Draft the stormwater diversion channels to see if draping on the surface would show the channel, rather than cutting it into the model, and circulate for comment.	July 21
Trent / SWCA	16. Post the EPG data to Tt to add to the data set as SWCA received it from EPG.	July 19
Marcie	17. Describe the powerline access roads in the effects analysis.	August 1
Debby / Rita	18. As if it is ok for the MPO to change to Lopez Pass for secondary access road? Inform David, Marcie and Kathy.	July 19
David	19. Provide drop structure location maps for Scholefield.	<b>Completed</b>
David	20. Provide drop structure location map for Barrel.	July 19
Joel	21. Deliver haul road alignments for Scholefield	<b>Completed</b>
Westland	22. Deliver water pipeline, pipeline roads, and pumps/boosters	??

## 1. DATA REVIEW- SPECIFIC NOTES

**#04 – Slurry Conveyor-** 48" wide conveyor, bottom of the conveyor would be 4ft off the ground. The cover would be a half-pipe, approximately 5-ft radius. There is no longer a filter plant associated with this alternative. Power will be carried by a transmission line in the conveyor ROW.

Power would be provided to the conveyor by wooden pole structure (2) 60 foot poles (hung 10 below) and spacing would be 400-500 feet.

**# 05- Facility layout-** M3 has delivered list of building heights and elevations. However, the map and the list need to be labeled consistently. Height of the Sulfide Ore Stockpile is approximately 100 feet tall (will vary over time). To show facilities, Trent will project basic shapes (rectangles and cylinders) to be painted the RCC colors.

M3 will provide a map or diagram to associate the Tag # with the list of the building heights. –

**#07 Groundwater Monitoring Wells-** included in the same layer as # 38 Wells.

**#08 Haul Roads-** Needed to show ground disturbance for Scholefield to connect facilities, heap leach and storage areas. Color will based upon a lighter version of the mauve/pink of the waste rock colors.

**#09 Heap Leach-** Visible in Scholefield and MPO YR 10. Heap Leach as seen in Scholefield at YR 20 will not require stormwater benching and will be shown with a rougher rock color. Current simulation is adequate.

**#10 Highway Intersection Changes-** Total acres and design is included in the Traffic Study; drawings are in the reports (Tetra Tech does not have a layer for the changes). Updated traffic study will be received from ADOT in August (under review by ADOT).

**#13 Perimeter Access Road- including grading and elevation-** Phased Tailings road is in the file. Joel will draft a line to show the location of the perimeter roads for other alternatives, however cut and fill grading will not be developed.

**# 18 Powerlines-** Simulations are to show the preferred northern route and the southern route, if they are visible.

**# 22 Reclamation-** These contours will be used for simulations, with the exception of Scholefield which only has stacking contours. MPO has melded reclamation and stacking to show stormwater benching.

**# 31 Stormwater settling ponds-** Assume that settling ponds are at the base of all diversions. Size and location not designed.

# 32 Tailings- Tt will upload the contours of the Barrel only.

# 33 Vegetation Test Plots- Show in simulations if SWCA has time.

# 34 Waste Rock- same as 32

# 35, # 36, #37 Water Pipeline- Waiting on Westland

## 2. VISUALIZATION INSTRUCTIONS

1. Architecturally feather and mute the edges of drop structures to mimic talus cone structures (disperse at the bottom).
2. Lighten the ruddy colors in the shadows and use more of a blue color of the background shadows.
3. Heap leach at YR 10 MPO is covered with waste rock and same color as the waste rock facility; and it will have 3 years of rock on it.
4. Research colors of the bolsa quartzite and darken the shading if necessary.

## 3. DATA DISCLAIMERS-

1. 10 YR Data will not be available for Alternatives by DEIS.

### Scholefield Alternative

- Haul roads that would provide access to the heap leach and waste/tailings facilities are not shown as data was unavailable. This alternative would include xxx miles of haul road (CALCULATE MINIMUM DISTANCE).
- Primary access road is not graded.
- SWCA will update the surface with benches to show Tt stormwater sketch plan.

### MPO Alternative-

- needs to describe the stormwater shows rough concept.
- Perimeter road
- 

### Barrel Alternative-

2. Stormwater for Scholefield- use the diagram that David drew at meeting.
3. Perimeter roads data does not exist for MPO, Scholefield, or Barrel. Tt will draft a line drawing to show.
4. Highway intersection changes will require some widening as shown in the traffic report. The Traffic Report is being reviewed by ADOT and may be updated; the ADOT review will not be included in the Design Concept Review available by the end of the August.
5. Stormwater diversion channels will be shown as a line for MPO; other alternatives have cut fills. Trent will experiment with how to portray and how visible it would be.

	GIS Layer- Operations/Facilities	MPO	Phased Tails	Barrel Only	Scholefield	By	Description
	1 90.ft dam					NA	N/A
	2 AZ trail relocation	7/6/2010	7/6/2010	7/6/2010	7/6/2010	TT	
	3 Conveyor belt alignment				7/13/2010	TT	2009 Alignment
S	4 Conveyor/Slurry roads or catchments					TT/RCC	need dimensions follows alignment
	5 Facility layout- including building labels and elevations					TT/M3	Craig
	6 Facility Layout-Plant Site	7/13/2010	7/13/2010	7/13/2010	7/13/2010	TT	MPO diff from ACAD plan 3-5
	7 Groundwater monitoring wells	#38				in #38	
	8 Haul Roads				7/16/2010	TT	Requested
	9 Heap Leach	7/13/2010	7/13/2010	7/13/2010	7/13/2010	TT	
	10 Highway 83 intersection changes						ADOT - install in August
	11 Highway 83	6/28/2010	6/28/2010	6/28/2010	6/28/2010	TT	
	12 Hydrogeologic characterization wells					TT	Under Wells
	13 Perimeter Access Road- including grading and elevation		6/18/2010		*	TT	
	14 Perimeter security fence	7/6/2010	7/6/2010	7/6/2010	7/13/2010	TT	
	15 Pit fence on remote side					TT	
	16 Pit fence on road side					TT	
	17 Pit YR 19	6/29/2010	6/29/2010	6/29/2010	6/29/2010	TT	
	18 Power lines					EPG/swick	
	19 Powerline around perimeter of pit						Craig @ M3
	20 Powerline roads						
	21 Primary Access Road- including grading	6/29/2010	6/18/2010	6/25/2010	6/28/2010	TT	Scholefield road is not graded
	22 Reclamation	6/30/2010	6/29/2010	6/29/2010	7/13/2010	TT	MPO landform not graded to accommodate sw controls. Scholefield Alternative shows stacking not reclamation.
	23 Resource protection fences					W	Westland - (Mitigation)
	24 Roads to re-connect public access					W	Not to develop
	25 Secondary access road- including grading contours and ROW	6/29/2010	6/29/2010	6/29/2010	6/29/2010	TT	Lopez Pass
	26 Septic system						in plant site
	27 Stormwater- Central drain- MPO only	6/18/2010				TT	
	28 Stormwater- Compliance dam	7/1/2010	7/1/2010	7/1/2010	7/1/2010	TT	
	29 Stormwater- Diversion channels	7/13/2010	7/6/2010	7/6/2010	7/6/2010	TT	AMEC diversions and pit diversion channel included. Channels for MPO not 3D.
	30 Stormwater- other info						
	31 Stormwater- settling ponds					TT	At base of diversions
B	32 Tailings- including contours & elevations	6/17/2010	6/17/2010		7/13/2010	TT	Stacking. Adjustments to graded and covered heap leach facility done on tailings stacking files. Ver for Scholefield
	33 Vegetation test plots	7/2/2010	7/2/2010	7/2/2010	7/2/2010	W	From Holly
B	34 Waste Rock- including contours & elevations	6/17/2010	6/17/2010		6/17/2010	TT	
	35 Water pipeline					W	Westland-
	36 Water pipeline roads					W	Westland-
	37 Water pumps & booster facilities					W	Westland-
	38 Wells	7/13/2010	7/13/2010	7/13/2010	7/13/2010	TT	
	39 Springs and Seeps	7/13/2010	7/13/2010	7/13/2010	7/13/2010	TT	
	40 Utility Corridor					EPG/swick	

o - To be delivered at future date.

✓ - Completed

? - Not yet designed

⊕ - Request not understood/defined.

B - Barrel only

S - Scholefield only



Beverley A  
Everson/R3/USDAFS  
02/19/2009 01:15 PM

To ccoyle, 2swca.com, tfurgason@swca.com,  
jmacinvor@swca.com, mreichard@swca.com, Debby  
Kriegel/R3/USDAFS@FSNOTES

cc

bcc

Subject Fw: Rosemont - Wilderness Issue Statement

Hi Everyone,

Please see Deby's message below. Who do you have on your team who could has wilderness expertise?

Thanks.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428

Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 02/19/2009 01:06 PM -----

Debby Kriegel/R3/USDAFS  
02/19/2009 10:27 AM

To Beverley A Everson/R3/USDAFS@FSNOTES

cc Debby Kriegel/R3/USDAFS@FSNOTES

Subject Rosemont - Wilderness Issue Statement

Bev,

At yesterday's meeting the ID team reviewed the wilderness issue statement and there was some good discussion. Although there are no wildernesses in the project area, the proposed mine could potentially have some effects on the nearby wildernesses (including Mount Wrightson and possibly even Rincon Mountain), and the Forest's wilderness evaluation process has identified a potential wilderness in the north end of the Santa Ritas. The team's gut feeling that this theme ought to be kept as an issue for now, but we weren't entirely sure how to fill out the screening criteria or how to document rationale because there is no FS ID team member with a strong background in Wilderness.

Tomorrow I will sit down with Laura White to review the issue statement and the screening/rationale for this theme, but what is I recommend that you try to identify **someone with SWCA who has expertise in wilderness**. Our FS wilderness experts are not available as team members (both are on details), but would hopefully have time to review SWCA's work.

The SWCA wilderness person should be knowledgeable with wilderness legislation, federal/FS wilderness directives, and evaluating wilderness impacts.

Thanks.

Debby



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/30/2009 05:15 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>, "Charles Coyle"  
<ccoyle@swca.com>

cc

bcc

Subject Specialist Report format~

History:

↩ This message has been replied to.

Hello

Please find attached an example of a specialist report that I wrote recently for the USFS here in Durango. It was my impression that this is an official USFS template for Specialist Reports, and then I have also attached some guidance that I find useful for writing them.

Unless I receive other direction, this is what I was heading for in the Specialist Report as a format or structure.

Tom and I discussed that specialist reports are expected to be stand-alone documents, with their own brief synopsis of the project, alternatives, etc in them so that the public can take it from the EIS and it still makes sense. Also, all of us Specialist Reports could share the same basic summary of the alternatives, and save writing time.....

Looking for thoughts and feedback. (Caviat~ this is not a final product, so ignore the bad stuff)  
<<r3-specialist-report-guidance-6-2008.doc>>

Marcie

<<Appendix Recreation\_draft 2009-03-27\_mdb.doc>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) r3-specialist-report-guidance-6-2008.doc Appendix Recreation\_draft 2009-03-27\_mdb.doc

↑  
Not printed.  
Example from another  
project (not a mine  
and not on Coronado NF)



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/30/2009 12:44 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Visual Technical Report Outline

<<Visual Outline- 2008-03-10.doc>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual Outline- 2008-03-10.doc

# Guidance on Specialist Reports to Support NEPA Documents

Region 3 Environmental Coordination  
June 2008

## Introduction

The purpose of this white paper is to assist interdisciplinary team specialists in developing resource reports that support NEPA documents.

Specialist reports describe what was observed on the project site regarding a given resource, what analysis methodologies were used, and the predicted results of the various alternatives. The results or conclusions of the specialist report are summarized in the NEPA document with a citation to the resource report (e.g., Smith 2008). The report displays for the Responsible Official and the public what the predicted effects on that resource will be by alternative.

Specialists are often referred to as “agency experts” in court proceedings because their education and relevant experience give their analysis and written evaluations more deference in the eyes of courts as well as higher-level reviewers.

The strongest and best-documented resource reports have the most impact if they are based on:

- Evidence from the actual site where the project is proposed (i.e., site-specific information);
- Evidence that is recent, pertinent, backed up by literature citations and local scientific research; and
- Local knowledge of resource.

Tests of a good specialist report include:

- Is the report following regional protocol or standards? Would it pass an in-house review?
- Is it site-specific? Does it adequately describe the existing conditions?
- Are there recent monitoring surveys? Were results evaluated and interpreted?
- Does it consider the best available science and use latest methodology?
- Are the expected impacts and differences among alternatives clear to the reader?
- Are effects consistent with forest plan requirements? Would an amendment be needed to make alternative(s) consistent?
- Is the report understandable? Is it well written?
- Is the report based on professional judgment not personal bias?
- Was the analysis conducted in an interdisciplinary fashion so that reports from different specialists do not contradict each other?

## Sample Outline

This outline is not intended to replace requirements of biological assessments and evaluations or heritage resource reports. Those reports require content and format required by agency policy or national direction.

Specialist reports need not duplicate full descriptions of the purpose and need, proposed action, decision framework, alternatives, etc., found in the NEPA document itself but there should be enough information in the report to connect with the NEPA description. It might be worthwhile for teams to come up with a standard section with PA, P&N, and Alternative descriptions to insert into each resource report.

## I. Analysis Questions to be answered.

Analysis questions for each resource should be developed by the ID Team in an “interdisciplinary fashion,” with applicable specialist involvement, and approved by the Responsible Official. The Responsible Official can act as a barometer for what resource areas need extensive analysis, versus those that only need cursory analysis (non-significant environment effects areas) with the goal of creating a focused analysis.

For all specialists, the analysis questions must identify and address effects to all issues identified as needing analysis and disclosure, required analyses (such as TES, MIS) and effects relating to public concerns identified during scoping. If the EA/EIS has comparison criteria for your resource in the purpose and need, objectives or significant issues, include these here. For project proponents from outside the agency, analysis questions must address whether, or to what degree, the project meets purpose and need objectives.

Some reports cannot be written until another one is finished, so it is beneficial to discuss this “sequencing” of analysis and put into applicable timelines and due dates (e.g., wildlife needs vegetation analysis, water quality needs soils, etc.). Examples for a Recreation Resource Report for a typical thinning with popular recreation use might include:

- *How would project activities affect dispersed recreation (Camping, Hunting, Fishing, Berry Picking, Firewood Gathering, etc.)?*
- *What effect would new road construction and other disturbances (e.g., skid trails) have on off-road vehicle use in the project area?*
- *How would project activities affect Snowmobile Users?*

## II. Description of Affected Environment’s Existing Conditions

- Briefly describe the existing condition of the environment that would be affected (relevant to the analysis questions).
- Key components should reflect analysis of reaching the purpose and need statement, e.g., if there is a need for reducing flame length or basal area, describe them.
- What past activities or natural disturbance events have determined the existing condition? For instance, a wildland fire may have shaped the existing condition. A map, graphics or pictures are helpful to describe the current state of the resource.
- What is the affected resource area? Size? Describe if the analysis area is different from the project area and why (where do effects go?).
- Use references that help describe the existing condition and the processes at work. Use background information, larger broad scale assessments, watershed assessments, surveys, non-Agency surveys, or other reports. Consider referencing other analyses such as Forestwide or watershed scale roads analyses, or Forestwide Management Indicator Species report habitat reports.
- Look at resource processes such as erosion, in-migration, etc.
- Do not forget existing Environmental Impact Statements that have useful information. Use older analyses (past actions or similar projects) in the same area to describe past condition or actions. Private, local, county, or State analyses should be reviewed for applicable information, value, validity or usefulness.

### **III. Describe Relevant Laws, Regulations and Policy that Apply**

- Be specific about the Federal and state law, regulation and policy affecting the resource (such as State requirements under the Clean Water Act).
- Briefly describe Management Areas from the Forest Plan with guidelines that apply and any Congressional designations in the affected area.
- There may be District policies such as administrative road closures in place, or fire levels restricting activities that would dictate policy in day-to-day activities that may need to be explained.

### **IV. Summarize Alternatives and Mitigation Measures**

- Each report must use the same set of alternatives, design features, mitigation measures, etc. Specialists may not add their own to mitigate effects or describe what they think should be added. If completely unacceptable effects show up in analysis, the specialist must go to team leader and the team and discuss any changes. The Line Officer would then have to approve such changes and the whole team would use the new version.
- Describe alternatives enough to emphasize the actions and effects on the resource. Reports do not need to duplicate descriptions found in the EA or EIS, but should give enough information so that the reader understands causes and effects for the alternatives.
- List mitigation measures that will be required, and describe “ability to implement” and “effectiveness.” If you have a long list (e.g., BMPs), put this information in an appendix.
- Describe what the mitigation measures are designed to accomplish. The effectiveness of the mitigation measures need to be discussed.
- Use observation, field tests, references, or monitoring results to back up discussions on the effectiveness of mitigation.
- When mitigation is included as part of an alternative’s design, the alternative’s effects analysis includes the required mitigation. Be sure to coordinate the mitigation list with the interdisciplinary team members so they are looking at effects based on the same mitigation.
- If mitigation is new or untested, it may require monitoring in the decision.
- Adaptive management options need to have the monitoring requirements described here in detail so that if a change is needed in the future the monitoring data can back up the change in the implementation of the project.

### **V. Methodology and Analysis Process**

- Describe models used, GIS analysis used, field visits, monitoring similar actions, discussions with other experts, etc.
- If a model was used, give a reference in the record to a description of how the model works and what it is supposed to show.
- If other agency work is relied on, such as Natural Resource Conservation Service (NRCS) soils inventory, give a complete citation in the report and put it in the record.
- Factors used for analysis should be linked to the current condition description. There should be a basis for comparison between the current condition of the resource and the effects from alternatives.
- Quantitative measures are preferred. An analysis and interpretation of measurements is important and helps the reader follow the train of thought (scientific methodology). Sometimes social effects must rely on qualitative analysis; however there still are standard methods, etc., used in the social sciences that should be explained.

## VI. Effects Analysis

- Describe effects with all required mitigation measures applied. Effects discussions must answer the Analysis Questions listed at the beginning of the report, and must address compliance with Forest Plan standards and any other laws, regulations, executive orders, or policies that apply.
  1. **Effects of not implementing the project actions (No Action).** Describe what the effect would be if we fail to achieve the purpose and need. The No Action is often referred to as the “baseline” but that does not mean no effect. If we do not take a “needed” action, there should be very definite effects (negative or positive).
  2. **Effects Common to the All Action Alternatives.** Start with a rather general discussion (e.g., “Logging causes soil compaction. Compaction decreases moisture holding capacity which reduces tree growth”) then move to more site-specific discussion (e.g., “Under all action alternatives, Unit 1 would be tractor logged, resulting in 15% of the area being compacted”). Strive to say it once only; do not repeat the same discussion for each alternative.

If the effects of alternatives are similar, then lump the alternatives together. Do not needlessly duplicate one paragraph to the next. Copying text over and over is harder to read, easier to make mistakes, and it does not help explain effects. If there are differences in effects between alternatives, explain them. If there are no differences among alternatives, maybe the resource, or the measure used to display the effects to the resource, is a minor issue among the alternative actions.

3. **Effects unique to each action alternative, and the differences among the action alternatives.** Describe differences among the alternatives here. If your analysis questions require a comparison among the alternatives, this is the place to calculate the numbers and display the results in a table or chart.

Put the conclusion first in your effects analysis discussion, followed by the evidence to back it up. Do not make the resource report a mystery novel. Do not allow people to go off track following data, analysis, evidence and conclusions. It is better to give the reader the conclusion at the beginning of the discussion, and then support the conclusion. Displaying effects by alternative in tables or charts is very effective and should be done so for all important effects.

- Direct, indirect and cumulative effects must be analyzed.
- Direct and indirect effects should be kept together in their own section since it is difficult to draw the line between them. Indirect effects are farther away in distance and time from direct effects, and may display duration and intensity of effects.
- Effects are expressed in cause-effect relationships and are site-specific where possible.
- Use appropriate measures (indicators) to describe and display the environmental impacts of the alternatives. Where possible use quantitative measures, as opposed to qualitative or relative measures.
- Remember to talk about natural disturbance events and patterns. If a wildfire or periodic flooding is the overriding cause of effects in the area, then describe it as part of the baseline (existing condition). Some past events occurred so long ago that the effect is permanent, while some are recent enough to require explanation. The actions proposed may be minor in comparison to natural events, but the total effects of the past events and the proposed activity are additive to them (sediment from project compared to flooding).
- Factors to evaluate under NEPA include irreversible or irretrievable effects, short-term versus long-term effects, and any adverse environmental effects that cannot be avoided (40 CFR 1502.16). One aid in doing this is to look at what the Forest Plan identified in these effect categories.

#### **4. Cumulative Effects Analysis**

- The cumulative effects analysis should follow the direct and indirect effects analysis immediately in the effects section of the text.
- Cumulative effects analysis is merely an additive process. Add the effects from past, present or foreseeable projects to the project's alternatives' effects then analyze and interpret them. Just saying "50 acres + 50 acres = 100 acres is not 'analysis.'"
- To initiate the cumulative effects analysis, make a list of all past, present and reasonably foreseeable actions that will contribute to cumulative effects of the resource. Include the title of the project, date of implementation, and some measure (such as acres, miles, etc.). Narrative descriptions are not necessary. The list should cover the important past or ongoing projects. Use judgment as to how far back in time the list should go (i.e., is the condition permanent now from grazing 100 years ago? Or is their current grazing affecting the resource?). In most cases the continuation of past actions or natural events should be described in the baseline condition, so they would be covered.
- Cumulative effects analysis does not differentiate between private and public land ownership. If there are projects going on other land ownerships, they should be listed and addressed (State projects on State land; other Federal land projects; private property projects, such as subdivisions, etc.).
- If you report that there are no direct or indirect impacts to your resource from the project, there are likely no cumulative impacts since there is nothing to add up. This is fairly rare, since most land had at least past actions. However, it is possible that all effects to a resource were mitigated, such as effects to cultural sites, but be very careful in making this pronouncement.
- There is some debate about whether the No Action can have cumulative effects since we are not proposing an action. However, consider what would happen to an outside proponent if we took no action and then determine if something should go under cumulative effects. Not giving a permit could cause financial effects so you'd need to see if there were other financial effects.
- If the cumulative effects analysis is so generic or meaningless that it can describe any project anywhere on the forest, then it doesn't disclose to the public the hard look under NEPA that is required.
- If using GIS analysis or model, explain the steps from what is on the ground, through the calculations, to the mapping output and what it means. This process or methodology should be in the record. It cannot be modified or fixed in court later if it was not disclosed.

#### **5. Conclusions about Alternatives' Effects**

- Do the predicted effects approach, fall within, or exceed thresholds set forth in law, regulation or policy? Describe what this means to the resource – is 10% over threshold important or not?
- Do the effects of the alternatives fall within Forest Plan standards and guidelines?
- Will a Forest Plan amendment be needed to implement a given alternative because it is not consistent with the Plan? If an amendment is needed, include the rationale on why the amendment is needed.
- As the final step, look at your description of effects. Is the report clear enough that the public and the decision maker know what the tradeoffs among alternatives are?

- Know the facts and reasons and spell out the effects on the resource. Facts will speak louder than speculations or opinions. Analysis should be clear so that a judgment can be made by the reader.
- Significance determination (FONSI; for EAs only). Make sure to address the ten Significance Factors that apply (see FSH 1909.15, Section 05, under definition of “Significantly”). However, do not draw any conclusions as to whether effects are actually significant (that is the Responsible Official’s job to reach conclusions regarding significance). Just display the effects in relation to law, regulation, or policy (e.g., forest plan S&G’s) (see first bullet above). Make sure the record includes documentation to make significance determination in FONSI.
- In general, the word “significant” should not appear in any specialist report or NEPA document as that would be a judgment call left for the Responsible Official to make in the decision and/or FONSI. Your analysis and conclusions about effects should be subjective and comparative with enough detail for the reader to understand the magnitude, duration, and extent of the effects.

## **VII. Discussion of literature relevant to the Analysis Questions to be answered and Literature Cited in the Report.**

- Include opposing viewpoints. This needs to be a discussion. Simply listing literature you consulted is not adequate. If you are discussing a subject that the public is likely to question or dispute your conclusions, you must include a literature discussion. However, if there is no dispute or contention, you can omit this discussion.
- Include a list of all citations from the report, such as journal articles, books, government documents, published papers, and personal communications referenced (from researchers, other specialists in the field, state agencies, etc.).
- All references used in the report should be in the project record. Where references are lengthy, as in a complete hardcover book, include a photocopy of the key pages referenced in the report. Be sure to have the reference readily available upon appeal or litigation.
- Be careful about citing reference that cite other references if you cannot find them since they may not be accurate and may be difficult to find it needed for litigation.

## **VIII. Sign and Date Report for the Record**

Sign and date the original report and put it in the project record. Keep a copy in the resource files. Supply a signed and electronic copy to the writer/editor along with a copy of the data, field notes, correspondence, any modeling calculations, email, maps, and other information used in the report. The final signed and dated report should be used for the report and NEPA document, not a draft.

Make sure pages are numbered and there is a document title in footer or header.

## **IX. Revised Report in Response to Public Comments on Draft**

A specialist report is written prior to the release of the NEPA document to the public for comment. It is summarized and cited in the EA (or proposed action) or in the DEIS. Once all comments are received, the ID Team should meet, conduct the content analysis, and determine what comments need responses in the final NEPA document. Follow standard regional protocols for this content analysis (unless contracted out). Responses to comments often consist of clarified or expanded analyses, additional alternatives, appendix material, etc. This may or may not require the specialist report to be revised; if it is, it should be labeled as such with new date and signature. The original should always be kept in the record since it was used for the comment version of the NEPA document. An EIS requires a display of how this process was done and is usually in an appendix. This can be a major time factor in preparing an FEIS. Since a draft or summary EA is sent for comment, responses are used to create the final EA. Something should exist in the EA record to document the content

analysis process for responding to comments. After public comments are responded to, specialists may want to revise, append, clarify, or add information to their report (adding a new date and new signature). The final document should then cite this final report (e.g., a DEIS may cite one version and the FEIS may cite the revised report, but they should both be signed and dated and in the record).

This review of public comment is an opportunity to analyze criticisms of the report prior to the project being final, and to fix any problems or vague discussions in the report. Coordinate with interdisciplinary team members so no conflict arises with other responses.

## **EIS Affected Environment**

1. Introduction
2. Regulatory Framework
  - a. USFS Federal Policy and Guidance: Visual Resource Management
    - i. VQOs (manuals, process, etc for each)
    - ii. SIOs
    - iii. Wilderness
  - b. Forest Plan Guidance
    - i. Existing policy
    - ii. Future trends (i.e. current/upcoming Forest Plan process)
  - c. Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - i. Scenic Byway visual resource management
    - ii. Patagonia Scenic Byway Corridor Management Plan
3. Existing Landscape Character and Visual Resources (narrative)
  - a. Landforms and landscape features
  - b. Vegetation
  - c. Color
  - d. Textures
  - e. Structures & land use
4. Viewsheds, View Corridors, and Sensitive Viewers
  - a. Project Area
  - b. Communities and Rural Development Areas
  - c. Santa Rita Mountains
  - d. Patagonia Scenic Byway
  - e. Wilderness and wilderness study areas
5. Visual Resource Key Observation Points
  - a. Description of key observation point process
  - b. Selection/representation of key observation points
6. Trends affecting visual resources
  - a. Forest management activities
  - b. Non-forest (i.e. Rural development)
  - c. ??
  - d.

## **Visual Technical Report**

1. Introduction/Executive Summary
  - a. Purpose of Specialist Report
  - b. Decision to Be Made
2. Proposed Action and Alternatives
3. Issue Summary and Potential Impacts to Visual Resources

- e. Visual Resources Issue Statement (synopsis from Scoping Report)
  - f. Internal scoping/ Agency analysis factors
  - g. Elements of visual resource management (design considerations)
  - h. Summary of Analysis parameters
7. Regulatory Framework
- a. USFS Federal Policy and Guidance: Visual Resource Management
    - i. VQOs (manuals, process, etc for each)
    - ii. SIOs
    - iii. Wilderness
  - b. Forest Plan Guidance
    - i. Existing policy
    - ii. Future trends (i.e. current/upcoming Forest Plan process)
  - c. Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - i. Scenic Byway visual resource management
    - ii. Patagonia Scenic Byway Corridor Management Plan
8. Affected Environment
- a. Existing Landscape Character and Visual Resources (narrative)
    - i. Landforms and landscape features
    - ii. Vegetation
    - iii. Color
    - iv. Textures
    - v. Structures & land use
  - b. Viewsheds, View Corridors, and Sensitive Viewers
    - i. Project Area
    - ii. Communities and Rural Development Areas
    - iii. Santa Rita Mountains
    - iv. Patagonia Scenic Byway
    - v. Wilderness and wilderness study areas
  - c. Visual Resource Key Observation Points
    - i. Description of key observation point process
    - ii. Selection/representation of key observation points
  - d. Trends affecting visual resources
    - i. Forest management activities
    - ii. Non-forest (i.e. Rural development)
    - iii. ??
9. Research- Parameters of Visual Resource Protection and Mitigation (Design Considerations)-
- a. Mine Reclamation- form, line, texture, massing, etc
  - b. Habitat Restoration-

- c. Etc
- 10. Assessment Methodology and Analysis Process
  - a. Methods
  - b. Data Sources
  - c. Field Inventory
  - d. Regulatory Framework and Forest Plan Evaluation
  - e. Viewshed Analysis using GIS
  - f. Key Observation Points and Viewshed Analysis/Documentation
  - g. Visual Contrast/Modification Analysis for VQOs/SIOs
  - h. Concern level analysis
- 11. Environmental Consequences
  - 1. Introduction
  - 2. Summary of Visual Issues
  - 3. Indicators and Agents of Change for Visual Resources
    - a. Change in modification level not consistent with Forest Plan goals
    - b. Changes requiring Forest Plan Amendment
    - c. Changes affecting Scenic Byway use
  - 4. Alternative 1
    - a. Direct
    - b. Indirect
    - c. Cumulative
  - 5. Alternative 2
    - a. Direct
    - b. Indirect
    - c. Cumulative
  - 6. Commitment of Irretrievable Resources
  - 7. Consistency with Forest Plan Objectives

Debby Kriegel/R3/USDAFS  
08/16/2010 07:35 AM

To mbidwell@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Re: Rosemont working outline - Environmental  
Consequences

Ok. If the text clearly describes impacts prior to year 20, we will have some rationale for the additional simulations (though as you mention, we might have to push for them for data). Thanks.

mbidwell@swca.com



mbidwell@swca.com

08/13/2010 04:15 PM

Please respond to  
mbidwell@swca.com

To "Debby Kriegel" <dkriegel@fs.fed.us>, "David Harris"  
<dharris@swca.com>  
cc  
Subject Re: Rosemont working outline - Environmental  
Consequences

Thank you DebbyOne comment- I disagree that we should state that 10 year analysis will be in the FEIS, as we do not know that at this time. RCC may not be willing to supply that phasing. We can add when we know we will have it.

Sent from my BlackBerry Smartphone provided by Alltel

**From:** Debby Kriegel <dkriegel@fs.fed.us>  
**Date:** Fri, 13 Aug 2010 10:52:02 -0700  
**To:** David Harris<dharris@swca.com>; <mbidwell@swca.com>  
**Cc:** Debby Kriegel<dkriegel@fs.fed.us>  
**Subject:** Re: Rosemont working outline - Environmental Consequences

A few other comments:

1. I have been told that the top of the whitish tailings will be visible above the buttress in the early years of the project from some of the higher viewpoints (Hwy 83, Hilton Rd, etc.). Can you confirm this? If it's true, just mention it in an appropriate place...don't spend a lot of effort on it.
2. The only indirect effects I can think of are those from displaced visitors (who won't want to visit this area any more because it's far less scenic...you could reference the recreation section) and probably increased litter along Hwy 83 (from additional mine-related traffic). Are there others you can think of?
3. Mention somewhere that simulations at year 10 are not included in the DEIS, but will be provided in the FEIS. Explain why these are important (i.e., the plant and pit are more visible in early years, etc.).
4. I didn't see a lot of focus on different effects from various viewing distances (Fg/Mg/Bg) in the outline, but I suspect this will come out as you flesh out the verbiage and complete analysis work.
5. Mention lighting and effects on night time visual effects. Don't spend much time, just acknowledge and briefly describe. Same for dust.

Thank you.



"Marcie Bidwell"  
 <mbidwell@swca.com>  
 09/16/2009 09:49 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
 cc  
 bcc

Subject FW: Visual comparison table examples

History: This message has been replied to.

Debby,

Here is the other table that I was thinking of - sorry the formating is hard to read-

Basically, as a formula it shows=

Contrast Rating x Exposure (miles x speed) x Traffic volume x Sensitivity= Impact Rating

So, this is one way to take a qualitative description (magnitude of effect) and make it "measurable". Still lots of professional judgement, but shows how visual affect adds up.

Hope that is intersting. Just one way to do it.  
 Marcie

---

**From:** Matt Loscalzo  
**Sent:** Wednesday, September 16, 2009 10:34 AM  
**To:** Marcie Bidwell  
**Subject:** RE: Visual comparison table examples

I gotcha now. That table is the Visual Appendix. Here it is.

**Table 12. Anticipated Visual Impacts for Project Alternatives.**

KOP	VRM Class	Visual Contrast Rating		Miles/Minutes Per KOP <sup>3</sup>	2007 ADT Range		
		<sup>1</sup> Viewer Type	Viewer Sensitivity		Impact Determination <sup>2</sup>		
		Alts 1 & 3	Alt 2 Alt 4		Alts 1 & 3	Alt 2	Alt 4
1	None	Moderate to Weak		Moderate to Weak	None	2 miles	
4 minutes	CR 142 Low	Recreators, hunters, residents	High	Moderate Impact	Moderate		
		Impact No Impact					
		2	III Weak Weak	Weak to None	2 miles		
		48 minutes	Trail				
Very Low	Recreators, heritage tourists	Very High	Moderate Impact	Moderate Impact			
		Low Impact					
	3	III Weak	Strong to Moderate	None	1.5 miles		

3 minutes	CR 111	Low	Residents, tourists	High	Low Impact	Strong Impact	No Impact
4	None	Moderate to Weak	Moderate	Moderate to Weak	1 mile		
2 minutes	CR 142	Low	Residents, tourists	High	Moderate Impact	Moderate Impact	
5	None	Weak	Moderate to Weak	Weak	3 miles		
4 minutes	SH 350	Moderate	Residents, tourists	High	Moderate Impact	Strong Impact	
6	None	Moderate to Weak	Moderate to Weak	Weak	4 miles		
4 minutes	U.S. 189	High	Residents, tourists	High	Moderate Impact	Strong Impact	
7	IV	Moderate to Weak	Moderate to Weak	Weak	3 miles		
4 minutes	CR 134	Moderate	Residents, tourists	High	Moderate Impact	Strong Impact	
8	None	Moderate to Weak	Moderate to Weak	Moderate to Weak	2 miles		
				40 minutes	Trail		
Very Low		Residents, tourists	Very High	Strong Impact	Strong Impact	Strong	
9	IV	Moderate to Weak	None	Moderate	3.5 miles		
5 minutes	BLM	Moderate	Industry, residents	Moderate	Moderate Impact	No Impact	
10	II	Strong	Strong	Strong	1 mile		
				3 minutes	BLM		
Very Low		Industry, ranchers	Moderate	Moderate Impact	Moderate Impact	Moderate	
11	None	Strong	Strong	Strong	0.5 mile		
unknown	Very Low	BLM Admin	Unknown	Strong Impact	Strong Impact	Strong	
						Impact	

<sup>1</sup> Average Daily Traffic (ADT) was reported in Table 1 for available access routes and discussed in Section 1.4. County road and BLM administrative road data is unknown, and therefore rates of use were assumed to be low or very low compared to state and county routes.

<sup>2</sup> Determined based on Contrast Rating, estimated traveler exposure to visual impacts, visitor type, visitor sensitivity, and VRM class objectives.

<sup>3</sup> Calculated from miles of travel that the KOP represents the visual experience times the allowable speed traveled on the route. Speeds for state highways, paved county roads, dirt county roads, BLM administrative roads, and trails as expressed in miles per hour were 65, 45, 30, 20, and 2.5, respectively.

---

**From:** Marcie Bidwell  
**Sent:** Wednesday, September 16, 2009 10:29 AM  
**To:** Matt Loscalzo  
**Subject:** FW: Visual comparison table examples

Didn't we do a table for Rands Butte that was something like this, but without actual ADTs in it? That took the Contrast rating, by the range of use, to create a magnification of effect- kind of table?

That's the one I was thinking of.....

---

**From:** Marcie Bidwell  
**Sent:** Tuesday, September 15, 2009 3:56 PM  
**To:** 'Debby Kriegel'  
**Subject:** Visual comparison table examples

**Paradise EA**

**Table 5. Anticipated Visual Impacts for Project Segment and Components.**

Segment	VRM Class	Contrast Rating	Miles in view	Minutes in View	ADT <sup>1</sup>	Est. Traveler Visual Effects
<b>(minutes X ADT) Impact Determination<sup>2</sup></b>						
	1	II and III	Weak	4.4	5.3	1,430 7,579 Low Impact
	1A	II and III	Weak	7.0	8.4	1,430 12,012 Low Impact
	2	II and III	Weak - Strong	2.0	4.0	unknown unknown Moderate Impact
	2A	II, III, and IV	Weak - Strong	4.7	9.4	unknown unknown Moderate Impact
	Paradise Substation and Alternative		III	Moderate	N/A	N/A unknown unknown Low Impact
	3	II	Weak - Moderate	5.3	7.1	unknown unknown Moderate Impact
	4	II	Moderate - Strong	1.0	1.2	1,620 1,944 Strong Impact
	4A	II	Weak - Moderate	1.0	1.2	1,620 1,944 Moderate Impact
	5	II and III	Weak - Moderate	6.8	8.2	2,230 18,286 Moderate Impact
	6	III and IV	Weak	1.0	0.9	2,280 2,052 Low Impact
	6A	III	Weak - Strong	13.6	13.7	2,280 31,236 Strong Impact
	Jonah Substation		IV	Weak	0	0 0 0 No Impact

<sup>1</sup> Average Daily Traffic; <sup>2</sup> determined based on Contrast Rating, Visual Effects, and VRM class objectives

Marcie Demmy Bidwell  
 Environmental Planner  
 130 Rock Point Drive, Suite A  
 Durango, Colorado 81301

Office: 970.385.8566

Fax: 970.385.1938

[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
02/24/2010 12:32 PM

To "Kathy Arnold" <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>, "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc "Krizek, David" <[David.Krizek@tetrattech.com](mailto:David.Krizek@tetrattech.com)>  
bcc

Subject RE: Paint Color

Thank you~!

Kathy, would this be a standard color used on other Rosemont/August projects?

If you had an image of this paint used on an actual building, ideally under full AZ sun, that would be useful to include in the specialist report/record.

Thank you!  
Marcie

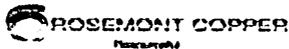
---

**From:** Kathy Arnold [<mailto:karnold@rosemontcopper.com>]  
**Sent:** Wednesday, February 24, 2010 12:10 PM  
**To:** Marcie Bidwell; Debby Kriegel  
**Cc:** David Krizek  
**Subject:** FW: Paint Color

Finally got a full answer on the paint color...

Cheers!

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



Rosemont Copper Company  
P.O. Box 35130 | Tucson, AZ 85740-5130  
3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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----- Forwarded Message

**From:** Clarissa Barraza <[cbarraza@rosemontcopper.com](mailto:cbarraza@rosemontcopper.com)>  
**Date:** Mon, 22 Feb 2010 10:16:42 -0600  
**To:** Patrick Glynn <[pglynn@rosemontcopper.com](mailto:pglynn@rosemontcopper.com)>, Katherine Arnold <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>  
**Subject:** RE: Paint Color

Kathy,  
The color is Lightstone from Premier (SR.50 SRI 58)

Regards,

Clarissa Barraza  
Project Engineer

Rosemont Copper Company  
*a subsidiary of Augusta Resource Corporation*

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**From:** Patrick Glynn  
**Sent:** Friday, February 19, 2010 3:53 PM  
**To:** Clarissa Barraza  
**Cc:** Kathy Arnold  
**Subject:** FW: Paint Color  
**Importance:** High

Please can you help Kathy with this asap Monday as I am out of the office next week.

Thanks

**From:** Kathy Arnold  
**Sent:** Friday, February 19, 2010 8:47 AM  
**To:** Patrick Glynn  
**Cc:** Lance Newman  
**Subject:** Paint Color

Patrick

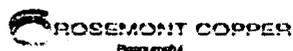
The Forest Service needs actual paint colors for the buildings at the plant site. Can you send me either a website or the names of the paint with a specific brand so that I can tie them to a real color – this is a 911 for help ASAP!

Thanks -

Kathy

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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----- End of Forwarded Message

Debby Kriegel/R3/USDAFS  
02/12/2009 10:53 AM

To mbidwell@swca.com  
cc tfurgason@swca.com, Beverley A  
Everson/R3/USDAFS@FSNOTES, ccoyle@swca.com,  
Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont EIS - Visual Resources

Marcie:

It was good to finally speak with you on the phone. Glad to hear that the change order is likely complete so you can get back to work on the project, and it's good to know that your schedule should be open to spend significant time on Rosemont for the next few months.

I'll look for your timeline/proposal on Thursday morning, and we'll discuss it at 10:00. Be sure to include:

1. Steps from my email dated November 5
2. Tasks from your December draft proposal, as well as my comments on this (sent to you via email on Dec 12)
3. Standard tasks for EISs (what you mentioned in an earlier voicemail message)
4. Coordination with Daniel Roth sometime soon
5. A meeting with biologists and hydrologists to brainstorm and discuss criteria for changing the shape of the waste rock and tailings piles. May I suggest a McHarg-type process, where you would get maps for the northern Santa Rita mountains showing archaeological sites, important wildlife areas, and visible areas, and overlay them to identify possible locations to pile tailings and waste rock that might minimize impacts to these resources?

You mentioned that you might want to review a reclamation plan for one of the mines the team visited last summer. Please let me know which one and I'll see if a plan is available.

I've been in touch with Dan Purvance at Goldcorp USA. Dan is a geologist with much experience in mine reclamation (including reshaping waste dumps and land sculpting). He is currently reviewing the Rosemont reclamation plan and hopefully will be able to direct us to one or more good examples of similar mine reclamation (ideally very large mines in climates similar to the Rosemont site). He mentioned some mines along the Colorado River and in southern California that might be good. I'll keep you posted, but don't wait for this information...you'll want to proceed with your research too.

Thanks!

Debby Kriegel, Forest Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427



"Dale Ortman PE"  
<daleortmanpe@live.com>  
02/09/2010 03:43 PM

To ""Horst"" <hjschor@jps.net>  
cc ""Debby Kriegel"" <dkriegel@fs.fed.us>, ""Melinda D Roth""  
<mroth@fs.fed.us>, ""Tom Furgason""  
<tfurgason@swca.com>, ""Marcie Bidwell""  
bcc

Subject Rosemont Landform Project

History:  This message has been replied to.

Horst,

The CNF has committed to finalize the list of alternatives for consideration in the Rosemont DEIS by March 15<sup>th</sup> and must determine if landforming is a viable alternative prior to that date. Therefore, the essential elements in your proposal of January 10, 2010 must be completed in time for the CNF to include them in their decision making process. Golder has confirmed that they will submit their report on Monday February 15 and you can receive a copy no later than the following day. In order to meet the deadline it is necessary for you to complete the following work elements no later than March 3<sup>rd</sup>:

- Task 1, Second bullet item - "review.... Golder's report and its implications for the Landform design." Note: Golder will be available for limited consultation.
- Task 2 – Landform Design
- Task 3 – Study three alternative locations for mine waste disposal
- Task 4b – Presentation of Landform design plans and findings to team members in Tucson. Note: In order to expedite the work schedule the design report (Task 4a) is not included in this work. Completion of the design report will be held until after the presentation.

Please let us know if you are able to complete the reduced scope-of-work within the necessary schedule, and any cost modification associated with the revision.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623



"Marcie Bidwell"  
<mbidwell@swca.com>  
12/21/2009 11:34 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>, "Trent Reeder"  
<treeder@swca.com>, "Michael Andres"  
<mandres@swca.com>  
bcc  
Subject RE: Potential Schedule and Strategy for Visual Specialist  
Report and Simulations

Debby,

Thanks for the comments, and I will adjust and incorporate your input as listed below.

However, Trent, Mike and I are each taking some vacation distributed across the last weeks of December, and therefore I will not be completing the edits to the Affected Environment or drafting the Environmental Consequences sections prior to Dec. 31st.

We will do what we can to deliver sections in the first two weeks of January.

Have a great break!~  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, December 18, 2009 12:14 PM  
**To:** Marcie Bidwell  
**Cc:** Tom Furgason; Trent Reeder; Debby Kriegel  
**Subject:** Re: Potential Schedule and Strategy for Visual Specialist Report and Simulations

**Marcie: Good start! My comments are in Red. Debby**

**1. Dec 31** (pending on receiving data from RCC before then)

- Add all tasks on latest visual resource analysis task list (Nov 18) to this schedule and submit to Forest Service. Identify which are still unfunded.
- Revise Affected Environment and submit to Forest Service, including all graphics
- Draft Environmental Consequences for proposed action and submit to Forest Service, including most graphics (simulations won't be ready)
- Provide examples of high quality simulations
- Outline and Figure list to USFS for approval (We already have an outline)
- Bounds of analysis map- work with Lara
- Add more DEMs- mike to download. (What does this mean?)
- Mike to collage panorams- KOP 4, 8, 16, (Is this pretty simple? If so, please collage all the KOPs)
- Marcie and Mike to help create color board and textures board for pit back, tailings, reclamation soils.
- Finalize full KOP list (Isn't there already a list or map of possible KOPs? What do you mean by finalize?)
- get specific Tucson coordinates from Debby and send Tucson employee to GPS and photograph (I provided this already, but it will require someone to visit each intersection to determine precisely the best place to set up a camera)

## 2. Jan 12-15 Week- Meet with USFS and RCC \*

- Review panoramas and finalize KOPs (What do you mean by finalize?)
- Present imagery/ color board for soil colors, trees, facilities, etc.
- Review draft of MPO simulation and discuss details/ how it turned out.
- Review not-visible landform diagram example for 1-2 KOPs
- Review 2-D (What does this mean?)

\* need to know when Horst will have his work done..... (Also need George's report Jan 15)

Jan 15-Jan 31 - Review landforming work and begin incorporating it into analysis.

## 3. Jan 31- Feb 10 (All are dependant on Horst's work being complete by Jan 31)

- Drafts of 3 KOPs for all alternatives (3 x 6= 18 simulations) to USFS (This is truly bare minimum. We'd need to decide whether to only simulate during the active mine life, immediately post mine, or long after reclamation has established. Yikes.)
- Meet with USFS/RCC to review
- Draft of Visual Specialist Report to USFS for review (Assuming we have alternatives truly developed long enough before this to do all the analysis by this date.)

## 4. March 1

- Final draft of 3 KOPs for all alternatives (18 simulations) to USFS
- Final Visual Specialist report to USFS by March 20

## FINAL GOALS

1. take 3 KOPs at final reclamation to the end for simulations (if Sycamore alternative moves forward, you'll probably need at least a 4th)
2. Take 3 Not-visible locations through to the end (I think that this is too few, and these should be pretty easy so why not do more?)
3. ~~Draft of~~ Final specialist report and EIS chapters

"Marcie Bidwell"  
<mbidwell@swca.com>

12/18/2009 11:11 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Trent Reeder" <treeder@swca.com>

cc  
Subject: Potential Schedule and Strategy for Visual Specialist Report and Simulations  
t

Debby and Tom,

Here is what Trent and I are thinking might be a good strategy to strive for, and deadlines that could work associated with it. Trent and I have evaluated the data that we have and to make investments in

downloading more data and upgrading our equipment to be able to produce these simulations quickly once we get the green light from Horst and USFS that the alternatives are finalized in land form.

What do you think about the following proposal:

**The parameters are:**

1. To build in waiting for an update from Horst as to what is landformable (and therefore going to change) prior to completing simulations for alternatives other than the MPO and Phased Tailings (from Tetra tech).

2. Draft the analysis off of draft simulations. I am assuming that we need Debby K approval on the visual report, and therefore it does not have to go to the entire ID team for review (or determine a separate list of reviewers, so that we can have our own schedule and meet it).

3. Take a short list of KOPs through to simulation and landform analysis by March 31, to be followed by more simulations in the FEIS.

- We propose to take 3 KOPs through to simulations: KOP 12 (mile marker 44), KOP 8 (Sonoita area), and KOP 16 (Hilton Road).
- Take 3 KOPs from "not visible list" through to land form diagram ("not visible" diagram as a section line through the mountains showing the profile, etc) - Tucson area, Maderia Canyon or Duval Mine Road, Saharita Mine Road, or Corona de Tucson (pick 3).
- Provide a visual analysis map that shows all of the KOP locations as visible/not- visible (all 24 KOPs as dots), and a table summarizing the area visible (we could split this out by land use, i.e. residential, public lands, etc).

**Here's a schedule that I am starting to think about for you to review and let me know if this will work for you:**

**1. Dec 31** (pending on receiving data from RCC before then)

- Outline and Figure list to USFS for approval
- Bounds of analysis map- work with Lara
- Add more DEMs- mike to download.
- Mike to collage panorams- KOP 4, 8, 16,
- Marcie and Mike to help create color board and textures board for pit back, tailings, reclamation soils.
- Finalize full KOP list
- get specific Tucson coordinates from Debby and send Tucson employee to GPS and photograph

**2. Jan 12-15 Week- Meet with USFS and RCC \***

- Review panoramas and finalize KOPs
- Present imagery/ color board for soil colors, trees, facilities, etc.
- Review draft of MPO simulation and discuss details/ how it turned out.
- Review not-visible landform diagram example for 1-2 KOPs
- Review 2-D

\* need to know when Horst will have his work done.....

**3. Jan 31- Feb 10**

- Drafts of 3 KOPs for all alternatives (3 x 6= 18 simulations) to USFS
- Meet with USFS/RCC to review
- Draft of Visual Specialist Report to USFS for review

#### **4. March 1**

- Final draft of 3 KOPs for all alternatives (18 simulations) to USFS
- Final Visual Specialist report to USFS by March 20

#### **FINAL GOALS**

1. take 3 KOPs at final reclamation to the end for simulations
2. Take 3 Not-visible locations through to the end
3. Draft of specialist report



"Marcie Bidwell"  
<mbidwell@swca.com>  
05/25/2010 02:02 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder"  
<treeder@swca.com>

cc

bcc

Subject RE: Paint Color

Debby,

Also remember that the buildings will be within a large cleared gravel parking area. In my experience the gravel clearing is a bigger visual impact than the buildings alone.

I will ask Trent how much time he will estimate it will take to work it up,  
THanks

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, May 25, 2010 12:52 PM  
**To:** Trent Reeder; Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** RE: Paint Color

Marcie and Trent: This is not a good color to mitigate visual resource impacts. It is much too light and will not blend into the landscape at all. This manufacturer offers many darker colors which would be much better (medium bronze is my recommendation). In order to show Rosemont the problem with light colors, may I recommend that you take your red rectangle (indicating the plant site), show it in Rosemont's light stone color and also medium bronze, and insert each each into a photo of the site? Or if you have another method to quickly display colors in the landscape, I'm all ears. Thanks. Debby

"Trent Reeder"  
<treeder@swca.com>

To "Marcie Bidwell" <mbidwell@swca.com>, "Michael Andres" <mandres@swca.com>, "Chris Loftus" <chris@loftuslandscapestudio.com>

05/25/2010 11:38 AM

cc "Debby Kriegel" <dkriegel@fs.fed.us>

Subjec RE: Paint Color

t

Awesome! Thanks.

Trent

**From:** Marcie Bidwell

**Sent:** Tuesday, May 25, 2010 12:32 PM  
**To:** Michael Andres; Trent Reeder; Chris Loftus  
**Cc:** Debby Kriegel  
**Subject:** FW: Paint Color

Hello All,

We will be using this as the base color for facilities at the RCC plant site.

Thanks!  
Marcie

**From:** Marcie Bidwell  
**Sent:** Tuesday, May 25, 2010 12:31 PM  
**To:** Debby Kriegel; 'Beverley A Everson'; Melissa Reichard  
**Subject:** FW: Paint Color  
Hello All,

This is the color information that I mentioned at the Alternatives Meeting from Kathy and I did a little e-research to find a color chip, please share with anyone else that may find this information useful.

Marcie

from <http://www.braemarbuildings.com/building-colors.php>



**Light Stone**  
**SR .50 SRI**  
**58**

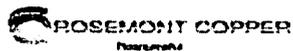
**From:** Kathy Arnold [mailto:karnold@rosemontcopper.com]  
**Sent:** Wednesday, February 24, 2010 12:10 PM  
**To:** Marcie Bidwell; Debby Kriegel  
**Cc:** David Krizek  
**Subject:** FW: Paint Color  
Finally got a full answer on the paint color...

Cheers!

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs

Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



Rosemont Copper Company

P.O. Box 35130 | Tucson, AZ 85740-5130

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----- Forwarded Message

**From:** Clarissa Barraza <[cbarraza@rosemontcopper.com](mailto:cbarraza@rosemontcopper.com)>

**Date:** Mon, 22 Feb 2010 10:16:42 -0600

**To:** Patrick Glynn <[pglynn@rosemontcopper.com](mailto:pglynn@rosemontcopper.com)>, Katherine Arnold <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>

**Subject:** RE: Paint Color

Kathy,

The color is Lightstone from Premier (SR.50 SRI 58)

Regards,

Clarissa Barraza  
Project Engineer

Rosemont Copper Company  
*a subsidiary of Augusta Resource Corporation*

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**From:** Patrick Glynn

**Sent:** Friday, February 19, 2010 3:53 PM

**To:** Clarissa Barraza

**Cc:** Kathy Arnold

**Subject:** FW: Paint Color

**Importance:** High

Please can you help Kathy with this asap Monday as I am out of the office next week.

Thanks

**From:** Kathy Arnold

**Sent:** Friday, February 19, 2010 8:47 AM

**To:** Patrick Glynn

**Cc:** Lance Newman  
**Subject:** Paint Color

Patrick

The Forest Service needs actual paint colors for the buildings at the plant site. Can you send me either a website or the names of the paint with a specific brand so that I can tie them to a real color – this is a 911 for help ASAP!

Thanks -

Kathy

**Katherine Ann Arnold, P.E.** | Director of Environmental and Regulatory Affairs

Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



**Rosemont Copper Company**

P.O. Box 35130 | Tucson, AZ 85740-5130

3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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----- End of Forwarded Message



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/14/2009 12:25 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Scope Revision~ current discussion

Debbie,

I received your email ~ thanks and working on it now.

I will try to connect with you tomorrow. I am eager to get our piece rolling and see what we can accomplish. Glad that Bev supports our making headway and hopefully it will attract other interested parties as we go and its relevant.

I heard that Jennifer Burns is joining the team down there! I am glad we will still work together through this project, but I will really miss her up here!  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, January 14, 2009 12:13 PM  
**To:** Marcie Bidwell  
**Subject:** Re: Scope Revision~ current discussion

Marcie:

I just re-sent my original scope of work email separately. Let me know if you don't receive it.

Other than you and I, Larry Jones (wildlife bio) wants to be involved in exploring waste rock re-shaping. And Dale needs to be involved throughout. As we proceed, I plan to keep other FS folks in the loop so they would have the option to join us if they like...but Bev discouraged me from wasting time trying to recruit a sub-group (she thinks visual and biology is plenty strong enough to proceed). I will look to you for ideas of reclamation experts and computer wizards....we'll need these folks, but this is beyond my normal work, so I really don't have any references. Do you?

Our meeting today so far is focused on issues and significance, but maybe we'll start discussing alternatives in the afternoon. I'm in the office most of tomorrow, so feel free to call.

Thanks.

Debby

"Marcie Bidwell" <mbidwell@swca.com>

01/14/2009 11:08 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject Scope Revision~ current discussion

Hello Debbie~

Tom and I are working together on this today while we are both in Denver. I was hoping that I could ask you a favor to forward your original scope email - I have committed some kind of email sin where I cannot bring up my archived copy, and I do not have my hard copy here.

Also, we are exploring who else (besides you and I) need to be on the team for developing this "visual alternative" - other resource specialists, reclamation specialists, etc? Ideas? My current proposal is mostly my time and support staff. Tom and I are discussing who else to make this a viable process (as we all discussed at the tour, multiple goal-multiple resource resolution).

Ideas are welcome. I will try to call shortly- I am very curious to hear how yesterdays meeting went to define alternatives from the comments.

Thanks!

Marcie

Marcie Demmy Bidwell  
Environmental Planner  
515 East College Avenue  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



"tjchute@msn.com"  
<tjchute@msn.com>  
08/24/2010 12:58 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Melinda D Roth"  
<mroth@fs.fed.us>, tfurgason@swca.com  
cc "Beverley A Everson" <beverson@fs.fed.us>,  
mbidwell@swca.com, "Debby Kriegel" <dkriegel@fs.fed.us>  
bcc  
Subject Re: Rosemont Chapter 2 comments (and EIS organization)

Debby,

All I can tell you is that Chapter2 is a work in progress. I'm not sure what version you looked at. Tom is taking the lead and I think trying to get the various pieces out together this week. So...stay tuned for a more complete version.

Sent from my Verizon Wireless Phone

----- Reply message -----

From: "Debby Kriegel" <dkriegel@fs.fed.us>  
Date: Tue, Aug 24, 2010 1:40 pm  
Subject: Rosemont Chapter 2 comments (and EIS organization)  
To: <tjchute@msn.com>, "Melinda D Roth" <mroth@fs.fed.us>, <tfurgason@swca.com>  
Cc: "Beverley A Everson" <beverson@fs.fed.us>, <mbidwell@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>

A week or two ago, I had a phone conversation with Marcie Bidwell. Normally in a NEPA document/process, there is a proposal, and then alternatives to the proposal (no action and other actions). Marcie and I had different understandings of whether Rosemont's EIS would be organized this way.

After scanning chapter 2, I'm still confused. I also immediately noticed some typos, inconsistencies, and more:

The first heading reads "Alternatives, Including the Proposed Action". Is the proposed action really an alternative? If so, what is everything an alternative to?

On page 2, there is a list of "Alternatives Considered in Detail", which lists No Action, Barrel-Mcleary (misspelled), Upper Barrel Only (I thought we dropped the word "Upper" a long time ago), and Scholefield-McCleary (I thought we dropped the word McCleary, now that waste rock will not be placed in McCleary creek).

I have many comments on the Visual Quality, Recreation, and Reclamation sections (see attached).

----- Forwarded by Debby Kriegel/R3/USDAFS on 08/24/2010 12:02 PM -----

Beverley A Everson/R3/USDAFS  
08/24/2010 10:50 AM

To  
Debby Kriegel/R3/USDAFS@FSNOTES  
cc

Subject  
Chapter 2, June 21, 2010 version.docx

As promised.

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305



Melinda D Roth/R3/USDAFS  
07/29/2010 04:01 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc mreichard@swca.com  
bcc  
Subject Re: Horst Schor final report on WebEx?

History:

This message has been replied to.

I will be giving John and Barb a list of reports to post. I will ask them to move the Schor report from "Specialist" to Technical" report area on the website.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
07/29/2010 11:44 AM

To Melinda D Roth/R3/USDAFS@FSNOTES  
cc mreichard@swca.com  
Subject Re: Horst Schor final report on WebEx?

It is posted under "specialist reports" instead of "technical reports". A couple of weeks ago I asked John Able to move it to technical reports in the visual quality folder. Melissa: can you move it?

Melinda D Roth/R3/USDAFS



Melinda D Roth/R3/USDAFS  
07/29/2010 09:44 AM

To mreichard@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
Subject Horst Schor final report on WebEx?

I don't see this report in WebEx. Is it posted somewhere? We need it to be so we can post it to the web. Thx. ps Thx for your note about the economic report that I was also looking for.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

04/02/2009 01:04 PM

To sleslie@swca.com

cc Debby Kriegel/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES, ccoyle@swca.com,  
tfurgason@swca.com

bcc

Subject Proposed Rosemont Mine - Recreation Analysis

Steve:

Thanks for your help with the issue statement worksheet for recreation and the chapter 3 outline.

We should discuss what your next few steps will be. I'm assuming you're familiar with the MPO and Reclamation Plan. What else do you need?

Some other assorted thoughts related to recreation...

1. We have GIS files for recreation sites (including developed sites, trailheads, sightseeing routes, etc.), ROS settings, and trails for the Santa Ritas. Do you already have this data? You also may want topo, roads, land ownership, wilderness, etc. You'll want to create a recreation resources map for the vicinity to determine which opportunities (including the many places mentioned by the public), are potentially effected by the project. Since your analysis will also include off-forest sites (tourism in nearby communities, other nearby public lands, etc.), you'll also want this data, though I don't know if we have much.
2. At our meeting this week, Kathy Arnold (RCC) mentioned that she has a map of noise limits for the project. I recommend that you get this info and overlay it onto the map from step 1.
3. A portion of the Arizona Trail has been relocated by RCC to avoid the project area. We have a GIS file for this trail, but I'm doubtful that it's the current route, and although I can ask our folks to GPS this trail, it's far from certain whether they'll have time to do so. What do you recommend?
4. I have heard that the Arizona Trail has been nominated as a National Scenic Trail. Would you please look into the status of this bill...and what typically results from such a designation? (I'm guessing there will be increased use)
5. Do you have any ideas for estimating the types and numbers of visitors to the site? It'd be nice to have something better than just an exhaustive list of all the possible dispersed recreation activities that might happen in the area. For example, ADOT's road counters on Hwy 83 might be helpful (this data is on their website). Also, I think I remember that Keith Graves (the past Nogales District Ranger) was handing out flyers to OHV visitors at the site. Would you please give him a call to discuss whether he received any input or data from this? Keith's number is (520) 403-4528. Are hunting permits site-specific (and therefore provide additional data)? Perhaps you have other ideas for quantifying use.
6. I don't know what recreation special use permittees operate in the Santa Ritas (or in the project area). Please call our special uses person, Duane Bennett at (520) 378-2838 to get information.
7. When do you plan to draft the Affected Environment section for recreation? Do you want/need to visit the project area?
8. At our meeting this week we began discussing alternatives. Do you have any thoughts on alternatives (or mitigation) for recreation?

Would you please provide a rough strategy for your work (steps/tasks, schedule, etc.) using the issue statements and worksheet, items above, and any additional thoughts you have? That would be a good start for our further discussions.

Thanks!

Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701

(520) 388-8427  
Fax (520) 388-8305  
dkriegel@fs.fed.us



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/30/2009 11:48 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Visual !~ need to coordinate

Hello Debby,

I just heard from Tom that the EIS is due to the FS by Oct 12- which you know I will be out from Oct 3-18, so I have 2.5 days to supply the following that has been requested for visual (from Tom F):

For your section (indicated below), I would like everybody to complete as much of the following by **October 12** :

1. Finalize Bounds of Analysis (Lara has the GIS data layers for all of the Alternatives) **we have this done for visual**
2. Finalize Draft Affected Environment section based on the Bounds of Analysis - **I will look at edits to include the concern level information and request maps for the AE section**
3. Prepare a very brief Plan of Analysis to determine environmental consequences of each Alternative. This may be simply a sentence such as "Use GIS to calculate acreages of impact." In the case of Night Skies and Visual I will simply insert the Scopes of Work from DSP and Marcie (Respectively). **We should talk about these as I am still expecting that we are still to do the Specialist Report. In which case, we need to draft an outline as to what goes in the specialist report vs the main EIS. As you know, we are still waiting to hear about the Change Order for visual simulations.**
4. Draft Consequences section of Chapter 3 for those sections where data and documentation exists (e.g., grazing, plants, etc.). **Tom is giving Visuals some leeway on this, as he knows we do not have all of the tools to complete the analysis.**
5. Identify data needs to complete Consequences section and submit a budget for your time to complete the section. **This is where we should consult our list and also draft the Specialist Report outline to cover what we envision still needing.**

Obviously, it will take time in October to complete the whole section. The timing is just terrible with my vacation, but we will do what we can.

Are you available sometime on Weds- Friday to discuss?  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938

[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
08/09/2010 04:00 PM

To mbidwell@swca.com, treeder@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES, jrigg@swca.com,  
tfurgason@swca.com  
bcc

Subject Fw: Quarry pictures

I just spoke with Bev, and she says that the marble in this quarry is lighter in color than the Rosemont pit rock. However, in the close-up photos that Melissa was able to send this morning, there is obvious weathering (darkening) on the faces and some plant growth, so we need to keep that in mind. The goal of this exercise is simply to follow up on Jamie's concern that the simulations show the color of the pit correctly at various distances. If the color of the quarry close-up and far away are the same, I think that's an adequate test to confirm that there is no need to tweek the simulations to vary the color by distance. If the color of the quarry close up changes color much when viewed far away, then let's talk. I haven't seen Melissa's photos taken at farther distances. Have you?

----- Forwarded by Debby Kriegel/R3/USDAFS on 08/09/2010 03:52 PM -----



"Melissa Reichard"  
<mreichard@swca.com>  
08/05/2010 01:29 PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc "Trent Reeder" <treeder@swca.com>, "Jonathan Rigg"  
<jrigg@swca.com>, "Tom Furgason"  
<tfurgason@swca.com>, "Chris Loftus"  
<chris@loftuslandscapestudio.com>  
Subject RE: Quarry pictures

I have been trying to upload all morning and it keeps getting locked up and then won't recognize the drive. Argh! I will keep trying but I may have to do this from the office. Are you waiting on this to get anything completed? When do you absolutely need it by?

**From:** Marcie Bidwell  
**Sent:** Thursday, August 05, 2010 4:58 AM  
**To:** Melissa Reichard; 'Debby Kriegel'  
**Cc:** Trent Reeder; Jonathan Rigg; Tom Furgason; Chris Loftus  
**Subject:** RE: Quarry pictures

Thank you Melissa!

Could I ask that you save them to the X:\Client Access\rccviz\Reference Photography folder instead of webex?

These that you sent are really interesting-

Can anyone who was at that meeting tell me if Jamie was willing to consider the limestone colors from this quarry as having anything to do with the colors that the Rosemont pit will be?

Originally he totally denied these rocks being related to the Rosemont pit. We can also ask Bev if she knows what type of limestone the quarry is and compare.

Thank you,  
Marcie

**From:** Melissa Reichard  
**Sent:** Wednesday, August 04, 2010 8:46 PM  
**To:** Marcie Bidwell; Debby Kriegel  
**Cc:** Trent Reeder; Jonathan Rigg; Tom Furgason  
**Subject:** Quarry pictures

Ladies-

I was out there today and was able to get all the way to the plant entrance- pretty exciting! I also collected some sample rocks, just in case anyone needed them. The previous pictures that were taken were actually well outside the 10 mile mark, so this should definitely be a defensible color scheme for the sims.

I made 7 separate stops and took some non-zoom and zoomed pictures. Lara gave me a GPS so that we could tell you specifically where I was. I will get that unit back to her tomorrow so she can work that magic. The guestimated ranges of these picture grouping are as follows:

Stop 02- about 9 miles from the Quarry, on Santa Rita Road  
Stop 03- about 6 miles from the Quarry, on Santa Rita Road at the electric line crossing  
Stop 04- about 4.5 miles from the Quarry, on Santa Rita Road, just past a small dirt road that I think is supposed to be Wilmot  
Stop 05- just outside 3 miles from the Quarry, on Santa Rita Road  
Stop 06- about 1.5 mile out on the white road going to the Quarry  
Stop 07- about 1 mile out on the white road going to the Quarry  
Stop 08- about 500 feet from the plant entrance (also where sample rocks were pulled)

In the end, I definitely captured whatever colors are there. I attached the pictures and Lara will be able to give you more definite ranges once I can get this machine back to her. I hope this fits what you needed. I attached a few from Stop 8, but the rest will have to be uploaded to WebEx. I will send out a link tomorrow for that.

*Melissa Reichard*  
Project Administrator  
SWCA Environmental Consultants  
(520)325-9194 ofc. (520)250-6204 cell

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"Stephen Leslie"  
<sleslie@swca.com>  
05/27/2010 08:21 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Public Roads

Debby,

Very good to know, I'll coordinate with Tom and Jonathan about getting the information from Rosemont.

Closing those roads to public access will definitely change the intensity of impacts.

Steve

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Thursday, May 27, 2010 8:17 AM  
**To:** Stephen Leslie  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Public Roads

Hi Steve,

Some new information...

At yesterday's meeting, Rosemont mentioned that MSHA has imposed some new requirements on public roads. Specifically, if roads are to be used for mine activities, they must be closed to the public. This would include the road over Gunsight Pass, as well as other roads currently open to the public that cross Rosemont's private land.

As you proceed with the road studies/maps for recreation access (existing and proposed), please include these new restrictions. I recommend that you get in touch with Tom Furgason to determine what the best way to obtain this information from Rosemont. I have not had much success getting information from them myself.

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Debby Kriegel/R3/USDAFS  
03/05/2009 03:21 PM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont Simulations 

Marcie:

Bev called me on her way out of town for 2 weeks (she's rafting the Grand Canyon). I told her that you wanted to get information about the simulations Rosemont is doing (or plans to do). She told me that you can contact Rosemont directly, but first you need to send an email to Kent, the FS Rosemont project manager while Bev's away (kellett@fs.fed.us) and ask him if it's ok for you to contact Rosemont. Kent should be able to give you the ok. And please cc Bev (beverson@fs.fed.us) and me with your email correspondence with Kent.

Thanks.

Debby



Melissa Reichard  
<mreichard@swca.com>  
Sent by: rosemonteis  
<notify@weboffice.com>

05/07/2009 01:12 PM

To sldavis@fs.fed.us, gmckay@fs.fed.us,  
ehornung@swca.com, sgriset@swca.com,  
tfurgason@swca.com, rbowers@swca.com,  
cc Melissa Reichard <mreichard@swca.com>

bcc

Subject Rosemont Virtual Tour

History:

📧 This message has been forwarded.

Hello All-

I just got the Virtual Tour from Rosemont. Basically, it is Jamie Sturgess talking about Rosemont's plans, the current and future operations. Some explanation of Core samples and the type of ore deposit is also discussed. Although it is from their website and is done according to that audience, it does offer some good shots of the area and the land where the pit is proposed and also some views out to SR83 etc. So, take a look if you are interested.

Thanks!

Mel

P.S. It will probably require your computer to have Quicktime or other movie viewing software installed.

Here's something on Rosemont Copper Project EIS that I'd like you to see. To go directly to the item, click the link below or paste it into your web browser. Please note that some email clients require that all the letters and numbers in the link appear on one line, or else it won't go to the right place.

<<https://rosemonteis.webexone.com/r.asp?a=5&id=144756>>



"Dale Ortman PE"  
<daleortmanpe@live.com>  
04/22/2010 06:55 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>, "Beverley A  
Everson" <beverson@fs.fed.us>, "Melinda D Roth"  
<mroth@fs.fed.us>, "Salek Shafiqullah - USFS "  
bcc

Subject RE: Horst's draft final report - Debby's draft comments

History:  This message has been replied to.

Debby,

To date, I have only received IDT comments from you on the draft landform report prepared by Horst Schor. Please confirm that no other IDT members have commented on the report and that I have all comments from the IDT .

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623

**From:** Dale Ortman PE [mailto:daleortmanpe@live.com]  
**Sent:** Friday, April 16, 2010 9:50 AM  
**To:** 'Debby Kriegel'  
**Cc:** 'Tom Furgason'; 'Beverley A Everson'; 'Melinda D Roth'; 'Salek Shafiqullah - USFS '; Rochelle Dresser (rdresser@fs.fed.us); 'Marcie Bidwell'  
**Subject:** RE: Horst's draft final report - Debby's draft comments

Debby,

Yes, there are major issues with this report. I'm committed to other work until early next week, but I will get back to you at that time. Please continue thinking about the report and engage with the other IDT members to develop a suite of comments from the CNF. I'm targeting having a set of comments for Horst by the latter part of next week. The contract gives us one round of review for the draft report so I

want to be sure we have everyone's input.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623

**From:** Debby Kriegel [mailto:[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)]  
**Sent:** Thursday, April 15, 2010 10:39 AM  
**To:** daleortmanpe@live.com  
**Subject:** Horst's draft final report - Debby's draft comments

Dale,

I just reviewed the report and here are my initial comments. I'd like to consolidate all of our comments (mine, yours, Salek's, and maybe Tom and/or Marcie's).

In the mean time, please give me a call to discuss. There are some fairly major issues....

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/24/2010 12:06 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Terry L Austin"  
<tlaustin@fs.fed.us>, "Walter Keyes" <wkeyes@fs.fed.us>  
cc  
bcc

Subject RE: Rosemont Roads and Trails

Debby,

Can you tell me if the CLs have changed since the version that you sent dated September 15th, 2009?

Additionally, I recommend that these be forwarded to EPG for their analysis process, as CLs are central to their work as well.

Thanks,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, February 22, 2010 2:54 PM  
**To:** Terry L Austin; Marcie Bidwell; Walter Keyes  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Roads and Trails

Attached is the latest map of concern levels for travelways in and around the Santa Ritas.

Terry: Would you please send this shapefile to Marcie?

J:\fsfiles\office\gisprojects\sup\_off\dkriegel\rosemont\concllev\SantaRitaConcernLevels2010.shp

Marcie: Please be sure you're using this version for SMS analysis.

Walt: This map shows the relative scenery/rec importance of roads and trails in the Santa Ritas. Will you be working on recommendations for reconnecting some of the roads around the project area? Rosemont proposed doing this in the MPO (see section 3-5 and figure 3-7), but the actual locations they show on their maps really don't connect much (Kathy says these maps are conceptual). Each alternative will need some new road segments, and we might also want a post-mine road map of some sort. Let's talk about this when you have a few minutes.

Thanks.



Reta Lafort/R3/USDAFS  
08/02/2010 07:54 AM

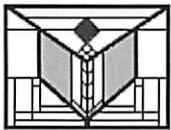
To Ruth Doyle/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES,  
mbidwell@swca.com, tjchute@msn.com,  
tfurgason@swca.com, Melinda D  
bcc

Subject Re: Rosemont EIS - VMS vs SMS - Need your input ASAP 

I concur that the focus of the DEIS analysis should focus on SMS, as it is a better disclosure tool. However, we will still need to briefly address consistency with the Forest Plan VQO.

Reta Lafort  
Deputy Forest Supervisor  
Coronado National Forest  
Phone: 520-388-8307

-----  
Ruth Doyle/R3/USDAFS



Ruth Doyle/R3/USDAFS  
07/29/2010 01:00 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc mbidwell@swca.com, Reta Lafort/R3/USDAFS@FSNOTES,  
tjchute@msn.com  
Subject Re: Rosemont EIS - VMS vs SMS - Need your input ASAP 

Debby,

I concur with your rationale and recommend using the Scenery Management System for Rosemont EIS analysis. One of the reasons why the FS developed the system is to be more defensible in court. In the event the decision on this project is litigated, using SMS may provide for a stronger, more supportable scenery analysis.

Ruth Doyle  
Regional Landscape Architect  
Southwest Regional Office  
505.842.3451  
e-mail: rdoyle@fs.fed.us  
Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
07/29/2010 01:32 PM

To Reta Lafort/R3/USDAFS@FSNOTES, tjchute@msn.com,  
Ruth Doyle/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES,  
mbidwell@swca.com  
Subject Rosemont EIS - VMS vs SMS - Need your input ASAP

SWCA has asked for written clarification (an email response should suffice) on whether to utilize the old Visual Management System (and VQOs) currently in our Forest Plan, or to use the Scenery Management System (SMS) for effects analysis for the Rosemont EIS. Although the systems have many similarities, the maps are different, and each system uses different terminology. We'd very much like to avoid 2 parallel analyses, one with each system.

The EIS will clearly state what is currently in the Forest Plan. However, VQO maps are broad-brush, forest-level mapping, and need refinement for project level work. And unfortunately, the VQO maps lack details for project-level work (e.g., there are no sensitivity level maps). I recommend that they use SMS for the project level analysis. Using SMS (and Scenic Integrity Objectives) will effect things like the "acres meeting objectives" chart, but probably not much (since few parts of Rosemont will meet any visual quality objectives). There may be other analysis pieces that will be different using SMS, but I don't see that as a major problem.

Rationale for using SMS, includes:

1. Since the mid 1990s, National Forests have been directed to use the SMS (Reynolds, 2380, August 22, 1994; McDougle, 2380, March 10, 1997; and Furnish, 1920/2380, June 11, 2001...I have copies of all 3 letters if you'd like to see them).
2. In 2001, Coronado National Forest completed its SMS inventory (and we have another letter from the Forest Supervisor at the time directing us to use SMS).
3. Forest Service Manual and Handbook directives both use exclusively SMS.
4. The revised forest plan will incorporate SMS, and the record of decision for the Forest Plan is expected to be completed in August 2011...which could easily be ahead of the Rosemont FEIS and decision.

I also suggest that the Rosemont EIS (or project record if that's more appropriate) includes a clear statement about the fact that the Forest Plan uses VMS, but for the Rosemont project analysis, SMS terms and process will be applied.

**Please let me know if you agree with this rationale ASAP. SWCA needs an answer quickly because they are forging ahead with affects analysis.**

Thanks!



"Tom Furgason"  
<tfurgason@swca.com>  
08/02/2010 09:56 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject DEIS Resource Section Template\_CE.doc

History:

 This message has been replied to.

Debby,

Attached is the general template for each resource section in Chapter 3. The only change since the May 18 meeting that affects all resources is the addition of a section at the end titled "Irreversible and Irretrievable Commitment of Resources". Some specialists, most notably Larry and Geoff, have substantially changed the outline in response to a need for a different structure. Larry and Geoff have been working very well together and have made some good changes to the organization.



Tom DEIS Resource Section Template\_CE.doc

## **Resource Section Title**

### ***Introduction***

**ISSUES, CAUSE AND EFFECT RELATIONSHIPS OF CONCERN**

**SUMMARY OF EFFECTS BY ISSUE MEASURES BY ALTERNATIVE (TABLE THAT WILL BE USED ALSO IN CHAPTER 2)**

**ANALYSIS METHODOLOGY, ASSUMPTIONS, UNCERTAIN AND UNKNOWN INFORMATION**

### ***Affected Environment***

**RELEVANT LAWS, REGULATIONS, POLICIES AND PLANS**

**EXISTING CONDITIONS**

**Applicable Subheading (i.e. OHV Recreation)**

### ***Environmental Consequences***

**IMPACTS COMMON TO ALL ALTERNATIVES**

**Mitigation Effectiveness and Remaining Effects**

**Direct, Indirect, and Cumulative Effects**

**IMPACTS SPECIFIC TO EACH ALTERNATIVE**

**Mitigation Effectiveness and Remaining Effects**

**Direct, Indirect, and Cumulative Effects**



Melinda D Roth/R3/USDAFS  
04/30/2010 01:19 PM

To karnold@rosemontcopper.com  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Fw: Phased Tailings Data and Reclamation Concept data -  
Visual Simulations

Kathy, Here is an email regarding today's short discussion of visual needs. If you have questions or concerns, please work directly with Debby. Thanks.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

— Forwarded by Melinda D Roth/R3/USDAFS on 04/30/2010 01:17 PM —



Beverley A  
Everson/R3/USDAFS  
04/26/2010 03:05 PM

To Melinda D Roth/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
cc  
Subject Fw: Phased Tailings Data and Reclamation Concept data -  
Visual Simulations

Hi Mindee,

Please see the message from Debby below. Can you please add this to the status meeting agenda?  
Thank you.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

— Forwarded by Beverley A Everson/R3/USDAFS on 04/26/2010 03:02 PM —

Debby Kriegel/R3/USDAFS  
04/26/2010 01:24 PM

To Beverley A Everson/R3/USDAFS@FSNOTES  
cc mbidwell@swca.com, Debby  
Kriegel/R3/USDAFS@FSNOTES  
Subject Fw: Phased Tailings Data and Reclamation Concept data -  
Visual Simulations

Bev,

I would like for Marcie to be able to get started with at least one visual simulation of the mine. The phased tailings alternative seems most logical, because it appears to have the most complete data.

Before she can begin, we need Rosemont to provide 2 things:

1. Confirmation that the undulating topography shown in the Reclamation Plan Update is what they are proposing for the phased tailings alternative.
2. Contour data for this topography.

Would you please forward this request to Rosemont, or bring it up at an upcoming meeting with them?

Thanks!

Debby

----- Forwarded by Debby Kriegel/R3/USDAFS on 04/26/2010 01:16 PM -----



"Marcie Bidwell"  
<mbidwell@swca.com>  
04/26/2010 10:31 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder"  
<treeder@swca.com>  
cc

Subject Phased Tailings Data and Reclamation Concept data

Hello Debby,

As requested, Trent and I checked data uploaded regarding the Phased Tailings Alternative (#3), and we do not have contours associated with Phased Tailings and the Reclamation Update.

Therefore, once you receive an official answer as to if Reclamation Update will be supplementing/replacing the Phased Tailings Alternative, SWCA will need to receive the contour data before we can proceed with simulations of that alternative.

Thanks,  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
03/08/2010 12:06 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Visual Resources SOW

Debby,

This appears to be the scope that was negotiated with Jamie in January. I believe this is the same list that we have been working through, but can take a closer look later this afternoon.

As to the file that you mention below, I will check with Mike who is out in the field right now. I suspect that you need to download the file, re-name it with a .zip extension and then you will be able to open it. I will check with him when he returns.

More this afternoon,  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, March 08, 2010 10:28 AM  
**To:** Marcie Bidwell  
**Subject:** Fw: Visual Resources SOW

Marcie:

Good morning. I have a couple of questions for you....

1. Is this SOW (see next message) something that I need to review or that we need to discuss? Or is it simply the currently funded tasks on the same list we've been using?
2. On WebEx, in the Visual Resources folder, there is a document called "Visual Simulation Panorama Revised" with a file name "KOP Panorama.7z" dated Jan 19, 2010. I can't open it. Did you post this?

Thanks.

~~~~~  
Debby Kriegel  
(520) 388-8427

----- Forwarded by Debby Kriegel/R3/USDAFS on 03/08/2010 10:23 AM -----

Beverley A Everson/R3/USDAFS

03/08/2010 06:11 AM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc  
Subject Fw: Visual Resources SOW

Hi Debby,

Attached is the latest SOW for SWCA visual resources. Please take a look and see if it covers what you've been looking for.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428

Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 03/08/2010 06:10 AM -----

"Tom Furgason" <tfurgason@swca.com>

To "Beverley A Everson" <beverson@fs.fed.us>

cc

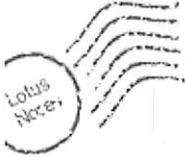
Subject Visual Resources SOW

03/03/2010 03:50 PM

Bev,

I'm sorry to make you ask again. Here is the visual SOW that we are authorized to work on. Please keep in mind that any violations in assumptions will likely require more money from Rosemont.

Tom



Beverley A  
 Everson/R3/USDAFS  
 07/14/2010 03:09 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
 cc  
 bcc

Subject Fw: Barrel Only Description

History: This message has been replied to.

Debby,

Thanks for the copy of the memo that you wrote on the landforming alternative. You provided a good description of the evolution of the alternative, and what you would like to have done to complete it. We'll see where it goes from here.

As for the description of the alternative, here's what Dale provided. He mostly just described responsiveness to issues. Can you add anything in terms of a description, ie., slopes, size compared to other alternatives, compatability with natural topography compared with other alternatives, etc.?

Bev

Beverley A. Everson  
 Forest Geologist  
 Coronado National Forest  
 300 W. Congress Street, 6th Floor  
 Tucson, AZ. 85701

Voice: 520-388-8428  
 Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 07/14/2010 03:06 PM -----



"Dale Ortman PE"  
 <daleortmanpe@live.com>  
 07/14/2010 01:12 PM

To "Beverley A Everson" <beverson@fs.fed.us>  
 cc "Lara Mitchell" <lmitchell@swca.com>, "Melissa Reichard" <mreichard@swca.com>, "Jonathan Rigg" <jrigg@swca.com>  
 Subject RE: Barrel Only Description

Bev,

We do not have any numbers from Rosemont/TetraTech on the new Barrel-Only landform, but here's a bullet list of the resource areas that we discussed during the development process.

- Water Resources – Primary driver for initial development of the Barrel-Only Alternative with the objective of keeping the McCleary drainage open.
- Visual – Primary driver for development of the new Barrel-Only landform
- Water Resources – New landform maintains McCleary open and provides a primary drainage path tying into Barrel Canyon; also provides for modified concave slopes on some slopes
- Recreation/Grazing/Wildlife/ – Post-mine resource may benefit from variable

topography

Resources that will likely suffer negative impacts are:

- Heritage Sites – Includes taking the Ball Court
- Air Quality – Active mine work occurs close to SR83

What we have is agreement on the basic topography and footprint of the potential alternative and Rosemont's assurance that they can construct the facility. Currently Rosemont is tasked with additional engineering, especially regarding the surface water controls, to add to the description.

Regards,

Dale

**From:** Jonathan Rigg [mailto:jrigg@swca.com]  
**Sent:** Wednesday, July 14, 2010 12:27 PM  
**To:** Beverley A Everson  
**Cc:** Dale Ortman PE; Lara Mitchell; Melissa Reichard  
**Subject:** Barrel Only Description

Bev,

Got a hold of Dale and he will be sending you a brief description of the updated Barrel Only alternative that was approved last Friday. Rosemont was tasked with determining total acreages, etc., and we have not yet received that data. Lara is working on making sure the Figure for tomorrow is this latest version. Dale will email you the description as soon as possible.

Thanks!

Jonathan Rigg  
Environmental Planner  
SWCA Environmental Consultants  
343 West Franklin Street  
Tucson, Arizona  
Phone: (520) 325-9194  
Fax: (520) 325-2033  
Email: jrigg@swca.com



"Marcie Bidwell"  
<[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
05/20/2010 04:11 PM

To "Stu Bengson" <[sbengson@aol.com](mailto:sbengson@aol.com)>  
cc "Kathy Arnold" <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>, "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
bcc  
Subject Consultation on plants and tree growth at the Rosemont Mine

Hello Stu,

Debby Kriegel, the Coronado Landscape Architect and I (SWCA Environmental Consultants) are working on the visual resource assessment and reclamation plan as it relates to revegetation for the Rosemont EIS. Kathy Arnold suggested that you would be a good resource to discuss the potential for plant growth and success on growth medium similar to that proposed at Rosemont Copper Mine.

I would like to ask you a few questions at some point regarding good information resources that we might be able to review and include in our literature search for revegetation.

Please kindly let me know your availability for a discussion,

Thank you,  
Marcie Bidwell

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

**From:** Kathy Arnold [<mailto:karnold@rosemontcopper.com>]  
**Sent:** Monday, March 08, 2010 9:11 AM  
**To:** Marcie Bidwell; Debby Kriegel  
**Cc:** Stu Bengson  
**Subject:** Stu Bengson

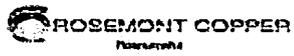
Ladies -

If you have questions regarding plants and trees and growth – Stu Bengson is available for consultation. His email is [sbengson@aol.com](mailto:sbengson@aol.com). Please just keep me in the loop as to the amount of involvement he has so that I will be aware of any charges he may have.

Stu please bill directly to me – this is part of that PO that Scott issued for you last week.

Thanks -

Kathy  
Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



**Rosemont Copper Company**  
P.O. Box 35130 | Tucson, AZ 85740-5130  
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Debby Kriegel/R3/USDAFS  
09/02/2009 08:46 AM

To tfurgason@swca.com  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont - SWCA Cost Estimate for Simulations for  
Proposed Action

Tom,

This week I briefed our new regional director of recreation on the Rosemont project. His background is in landscape architecture, so we discussed the simulations too. He asked about SWCA's cost estimate for the simulations for the proposed action. He thinks that the FS should know what the total cost is, since the FS is asking for this work and Rosemont may ask questions about the proposed work.

Please provide this information.

Thanks.

Debby



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/30/2009 07:07 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Charles Coyle"  
<ccoyle@swca.com>, "Tom Furgason"  
<tfurgason@swca.com>, "Trent Reeder"

cc

bcc

Subject RE: Rosemont - Simulations Needed for Proposed Action

History:  This message has been forwarded.

Debby,

I have briefed Tom and Charles on the basic "stratified simulation strategy" concept that you have attached here; I will work these additional simulations into tasks to accompany our original proposal at your request.

Basically, we will add a "not visible" and "distantly visible" tasks to the original . I think we can accomplish the first with diagrams and existing photography, and the second with a simpler simulation technology, and still keep costs controlled.

I think I can swing the Pepper Dates. Will confirm and let you know. Yes, I will plan on spending more time there for field work as currently fits in the budget. Perhaps the simulation budget will be in the works by the end of the month. We are looking forward to getting that started and I will need more background photography images for that work.

Thanks,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Thursday, July 30, 2009 9:34 AM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont - Simulations Needed for Proposed Action

Marcie,

I just met with our forest supervisor and deputy forest supervisor to discuss the bare minimum number of simulations likely to be needed for the proposed action. They support this strategy, and I recommend this for your proposal to Rosemont.

Also, the field review with Dr. Jimmy Pepper is scheduled for August 22-23. Do these dates work for you? On the same visit you could get some other field work done (like photographing the other KOPs and visiting the Mission Mine complex), we could try to do the eyeball miles study from Hwy 83, etc.

Thanks.

Debby



Simulation\_Strategy\_Proposed\_Action.doc



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/28/2009 02:14 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder"  
<treeder@swca.com>

cc

bcc

Subject RE: Rosemont Terrain Profiles

History:  This message has been replied to.

Debby,

Thanks for letting us know. Trent and I will check in with Tom to find out what is the plan for the alternatives.

Glad that you liked the section line. Very illustrative. We were thinking we could use this tool to accompany the "low budget, not visible sims" to show why you could not see the MPO from certain western KOPs (such as Maderia Canyon).

Did you receive that second section of text taht I sent you? I am finalizing the draft to go to Charles. Just wanted to get your comments on that section if you had any.

Good point on the research of 1000 feet walls~  
Any word on the Pepper presentation?

Thanks!  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tue 7/28/2009 10:52 AM  
**To:** Marcie Bidwell; Trent Reeder  
**Cc:** Debby Kriegel  
**Subject:** RE: Rosemont Terrain Profiles

Marcie and Trent,

Thank you for doing this! Removing 1000' of the back of the pit is definitely beyond crazy. For the proposed action, it appears that less than 400' would be visible, but knowing that 400' is still a lot, I'm now convinced that treating the back of the pit (by blasting horizontal terraces, spraying with Permeon, etc.) to lessen the visual impact will be more appropriate than removing the ridge.

For the alternatives with open views from Hwy 83 into the pit, this cross section is an eye opener, as you'll need to accurately show it in the simulations. However, this cross section might help Marcie focus research on finding examples that are in the ballpark of 1000'.

I am told that Alternative 6C is now on WebEx. Will you have time soon to put this into the 3D model? Can the 3 of us finally do a 3D flyaround sometime soon?

Thanks.

Debby

"Marcie Bidwell" <[mbidwell@swca.com](mailto:mbidwell@swca.com)>

07/24/2009 02:44 PM

To "Trent Reeder" <[treeder@swca.com](mailto:treeder@swca.com)>, "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc  
Subject RE: Rosemont Terrain Profiles

Debby,

The graph has a measurable scale that you can use to estimate how much of the ridge would remain and how much would need to be removed to "not see the back of the pit" which was the question that you had asked.

Let us know if you have any questions,  
Marcie

**From:** Trent Reeder  
**Sent:** Friday, July 24, 2009 3:39 PM  
**To:** Debby Kriegel; Marcie Bidwell  
**Subject:** Rosemont Terrain Profiles

Hi Debby,

I have attached a PDF with Profile Line Graphs showing a crosscut section of both the existing terrain and the Proposed Action terrain. The graphs represent the results of a Line of Sight Analysis that entails drawing a line from an observer point (KOP 12), to a target location for which was an arbitrary spot on the other side of the ridge. I made sure the line would dissect the proposed pit and cut across the pit floor for greatest elevation change. The Green and Red line colors represent sections that would be visible (Green) and sections not visible (red) from KOP 12.

Please let me know if you have additional questions. Thanks!

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
[treeder@swca.com](mailto:treeder@swca.com)  
130 Rock Point Dr. Suite A  
Durango, Colorado 81303  
Work (970) 385-8566  
Fax (970) 385-1938

[www.swca.com](http://www.swca.com)

**Minimum Simulations Needed for Rosemont EIS – Proposed Action**  
July 30, 2009

Confirm that proposed action is not visible - No simulations needed

- Madera Canyon
- San Xavier
- Tucson
- Vail
- Corona de Tucson
- Sahuarita
- Green Valley

Project effects small and/or distant - Simulate year with most effects (2 simulations)

- Sonoita (KOP 8)
- Las Cienegas Conservation Area (KOP 11)

Project effects moderate – Simulate year with most visible effects, and post-reclamation if view expected to be much different from existing view (3-6 simulations)

- Mt. Wrightson Wilderness (KOP 17)
- Hilton Rd. (KOP 16)
- Box Canyon (KOP 21)

Project effects large – Simulate as follows (7-8 simulations)

- Arizona Trail – 1 simulation of typical view along trail at the toe of the waste rock
- Hwy 83 pullout (KOP 12) - Simulate 2-3 phases (construction or early mine years, during active mine with most visible effects if it's different than the construction or early mine simulation, and post reclamation)
- OHV staging area at KOP 4 - Simulate 3 phases (construction or early mine years, during active mine with most visible effects, and post reclamation)

**TOTAL 12-16 SIMULATIONS**



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/07/2009 09:09 AM

To "Trent Reeder" <treeder@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>

cc

bcc

Subject Rating Sheet~

History:

 This message has been replied to.

Here is a tool I created for the flyaround. <<Rosemont KOPs.xls>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Rosemont KOPs.xls

| KOP GIS FLYOVER |                                 | ALT 1    | ALT 2        | ALT 3        | ALT 4       | ALT 5        |
|-----------------|---------------------------------|----------|--------------|--------------|-------------|--------------|
|                 |                                 | Proposed | Upper Barrel | Upper Barrel | Schoelfield | Sycamore     |
| NAME            | COMMENTS                        |          |              |              |             |              |
| KOP 001         | Maderia Canyon - 1.2 mi         |          |              |              |             |              |
| KOP 002         | Duval Mine Road Overpass        | None     |              |              |             | Minimal/None |
| KOP 003         | Corona de Tucson                | None     |              |              |             | None         |
| KOP 004         | SR 83 Roadside Table            |          |              |              |             |              |
| KOP 005         | (duplicate)                     |          |              |              |             |              |
| KOP 005-2       | Arizona Trail- South Project    |          |              |              |             |              |
| KOP 006         | Arizona Trail- southern project |          |              |              |             |              |
| KOP 007         | Arizona Trail- Barrel Canyon he |          |              |              |             |              |
| KOP 008         | Sonoita Junction                | Minimal  | Minimal      | Minimal      | Minimal     | None         |
| KOP             | ?? (duplicate)                  |          |              |              |             |              |
| KOP 009         | SR 83 and Fellows Ranch Road    |          |              |              |             |              |
| KOP 010         | Empire Ranch/BLM road           |          |              |              |             |              |
| KOP 011         | BLM kiosk and entry             |          |              |              |             |              |
| KOP 012         | SR 83 View Stop                 | Highest  | Moderate     | Moderate     | High        | None         |
| KOP 013         | Arizona Trail and USFS 4064     |          |              |              |             |              |
| KOP 014         | USFS 231                        |          |              |              |             |              |
| KOP 015         | USFS 231 ATV Staging Area       |          |              |              |             |              |
| KOP 16          | Hilton Road                     | High     |              |              | Highest     | None         |
| KOP 17          |                                 |          |              |              |             |              |
| KOP 18          |                                 |          |              |              |             |              |
| KOP 19          |                                 |          |              |              |             |              |



"Trent Reeder"  
<treeder@swca.com>  
08/03/2010 11:56 AM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>, "David Harris" <dharris@swca.com>  
cc  
bcc

Subject RE: VQO- Viewer Sensitivity Figure

Oh, I should've mentioned to Marcie that the Viewer Sensitivity Legend depicts classifications that also fall outside the Santa Rita EMA. If needed I can clip the data to the Santa Rita EMA to help refine/shorten the legend. Just let me know. Thanks

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
[treeder@swca.com](mailto:treeder@swca.com)  
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**From:** Marcie Bidwell  
**Sent:** Tuesday, August 03, 2010 12:51 PM  
**To:** Debby Kriegel; David Harris  
**Cc:** Trent Reeder  
**Subject:** VQO- Viewer Sensitivity Figure

Hello Debby and David,

Here is the VQO figure showing sensitivity- The data has all of the classes written out in one column, so its hard to work with. Trent did a great job isolating the values of our area to create this map. We used the terminology from the Coronado National Forest Scenery Inventory (2001) that you gave me, where Terry (USFS GIS) presents her methodology on creating these layers.

Side note, regarding your conversation/comment regarding "sensitive viewers" term. Following USFS manuals, we know that the USFS refers to it as constituent "sensitivity" and yet you thought that sensitive viewers was too "insensitive" of a use of the term- David and I will work on a solution and suggest something.

Please let us know your comments on this figure,  
Marcie

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
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"Marcie Bidwell"  
<mbidwell@swca.com>  
07/28/2010 12:33 PM

To <lmitchel@swca.com>  
cc "Trent Reeder" <treeder@swca.com>, "Jonathan Rigg"  
<jrigg@swca.com>, <dkriegel@fs.fed.us>  
bcc

Subject FW: Forest Boundary and Comments on Figures

History:  This message has been replied to.

Hello Lara,  
(will someone with Terri's email in their system please forward this to her (USFS GIS)- thanks)

I am hoping that you can help resolve the boundary issues, as Trent and I are slammed with other details. Trent, chime in as much as you have time.

The comments are referring to the data layer that you received from Terry yesterday. Trent said that you and he checked it with the rest of the USFS data and the one on the FS website.

The following comments regarding boundaries is relevant to the entire EIS process; the specific figure comments we can handle here in DUR.

Debby, after Lara and Trent give this one more look, its back to the FS to fix it. We are working with your data, and its what we have been given to use.

Thanks  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wed 7/28/2010 11:29 AM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Forest Boundary and Comments on Figures

The Forest Boundary has the following problems:

1. On the Bounds of Analysis map, it is missing all wilderness areas
2. On the other 3 maps, it is missing areas mostly on the east side (though there are some smaller areas on the west and south sides). The Forest boundary should be on the outside of all the colored areas shown on the VQO, SIO, and SA maps. There are private lands within the Forest boundary.

Other comments on figures:

1. Legend should read "recreation sites" (not "recreation points").
2. Add Corona de Tucson to BOA map.
3. The proposed construction area is not shown on VQO, SIO, and SA maps.
4. Show private lands within the Forest boundary on the VQO and SIO maps (probably in white or grey). Not so important on SA map (indicating objectives on private lands is the problem).

5. On SIO map, show CL1 (the most important travelways) in the brightest color (red), CL2 in med bright color (blue), and CL3 in lightest color (yellow). Also, it's very difficult to see yellow lines on a yellow background...darken something up a bit.
6. On the SA map, the AZ trail on the map is a different symbol than "roads and trails" in the legend. Either add "AZ Trail" to the legend, or show it on the map in the light grey color. Also, it's very difficult to see light grey lines on a light grey background (Indistinct)...darken something up.
7. Add a KOP map.

Thanks.

----- Forwarded by Debby Kriegel/R3/USDAFS on 07/28/2010 11:09 AM -----

Terry L Austin/R3/USDAFS

To Debby Kriegel/R3/USDAFS@FSNOTES

07/28/2010 10:57 AM

cc

Subject Fw: Santa Rita Boundary is attached

\*\*\*\*\*

Terry L. Austin  
 GIS/Data Specialist  
 Ecosystem Management Planning  
 Coronado National Forest  
 300 W. Congress  
 Tucson, AZ 85701  
 (520) 388-8356  
 fax: (520) 388-8332

email: [taustin@fs.fed.us](mailto:taustin@fs.fed.us)

\*\*\*\*\*

----- Forwarded by Terry L Austin/R3/USDAFS on 07/28/2010 10:57 AM -----

"Marcie Bidwell"  
 <[mbidwell@swca.com](mailto:mbidwell@swca.com)>

To "Terry L Austin" <[taustin@fs.fed.us](mailto:taustin@fs.fed.us)>, "Lara Mitchell" <[lmitchell@swca.com](mailto:lmitchell@swca.com)>  
 cc "Trent Reeder" <[treeder@swca.com](mailto:treeder@swca.com)>, "Melissa Reichard" <[mreichard@swca.com](mailto:mreichard@swca.com)>,  
 "Jonathan Rigg" <[jrigg@swca.com](mailto:jrigg@swca.com)>

07/28/2010 10:04 AM

Subject RE: Santa Rita Boundary is attached

Hello Debby,

We have received the boundary from Terry and we have compared it with the data that we have at SWCA.

It is the same boundary and the same one is on the Coronado GIS website.

Is there a specific area that you are concerned about? I recommend that you highlight the areas that are your concern and share it with us. Feel free to make changes on the maps or figures that I have already provided.

Also, you mentioned that you have edits for the figures. Please forward those as soon as you can. Trent is in the office this week for a few hours and can make adjustments if we receive them now.

Thanks  
Marcie

**From:** Terry L Austin [mailto:[taustin@fs.fed.us](mailto:taustin@fs.fed.us)]  
**Sent:** Wed 7/28/2010 6:34 AM  
**To:** Lara Mitchell; Marcie Bidwell  
**Subject:** Santa Rita Boundary is attached

\*\*\*\*\*

Terry L. Austin  
GIS/Data Specialist  
Ecosystem Management Planning  
Coronado National Forest  
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\*\*\*\*\*



"Dale Ortman PE"  
<daleortmanpe@live.com>  
03/24/2010 07:21 AM

To "Horst" <hjschor@jps.net>  
cc "Debby Kriegel" <dkriegel@fs.fed.us>, "Salek Shafiqullah -  
USFS" <sshafiqullah@fs.fed.us>, "Beverley A Everson"  
<beverson@fs.fed.us>, "Tom Furgason"  
bcc

Subject Landform Project

History:  This message has been replied to.

Horst,

Please review the email below from Debby. As you can see things are in flux with the landform project and we would like to propose that we still have a project update teleconference tomorrow (Thursday) at 3:30 PM; however we would like to hold on the final report for the time being. FYI, Jamie and Kathy referred to in Debby's email are both with Rosemont (Jamie Sturgess, VP of New Projects & Kathy Arnold, Director of Environmental & Regulatory Affairs) and have been invited by the CNF to participate in the update conference call and any ongoing project work. Following the teleconference we will review the existing SOW and make revisions as needed.

Please get back to me with any questions.

Cheers,

Dale

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, March 23, 2010 1:34 PM  
**To:** Dale Ortman PE  
**Cc:** Debby Kriegel  
**Subject:** Re: FW: Rosemont "Other Facilities" List  
**Importance:** High

Dale,

I presented a brief overview of landforming work by Golder and draft work by Shor to Rosemont today. Jamie and Kathy had lots of immediate comments and questions, but both seem open and willing to consider the ideas. Some specific questions they had:

1. Can they get a copy of the Golder Report? The technical content of this report is beyond FS expertise. Will you provide a review and determine whether it is complete and final?

2. Horst's draft design...

- Can Rosemont review the draft design immediately and then meet with you, me, and Horst to discuss the work before Horst's contract is complete? Jamie would like to have a more iterative process, rather than Horst simply finishing his work and turning in a final report. Some input from Rosemont on what concepts are fine and what concepts are not feasible would create a much better alternative, and I'm hoping that Horst will also see the value of this (and we'll need your thoughts on whether this is workable within his contract). Horst was planning to make a

presentation at 3:30 on Thursday, and this time works for both Jamie and Kathy. Can you talk to Horst about a slightly different presentation? (i.e., a discussion with RCC) The only alternate date that would work for Jamie and Kathy is next Thursday, April 1.

- Does the design truly accommodate the volume of waste rock and tailings? Kathy was skeptical, and would like to review the electronic files immediately. Can Horst provide these prior to Thursday so she can review them briefly?
- Does the leach facility as previously designed fit under the landformed shape?
- How would the PWTS pond and plant need to be reconfigured?
- Did Horst utilize Golder's parameters? If not, what would be needed for Golder to evaluate stability? Is 3:1 the steepest slope on the landformed design?
- Can the design avoid the ballcourt area? (I called Horst last week to ask him to give this another shot)
- Where did the tailings shape come from? I thought that Horst mentioned that it came from the Upper Barrel alternative, but it looks a lot like Rosemont Ranch.

Thanks Dale!

~~~~~  
Debby Kriegel  
Coronado National Forest  
(520) 388-8427



"Stephen Leslie"  
<sleslie@swca.com>  
09/03/2010 02:15 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>, "Jonathan Rigg"  
<jrigg@swca.com>  
bcc  
Subject responses

Debby –

In response to your comments:

**Recreation Figures:**

Bounds of Analysis – Recreation:

We will capitalize R in Recreation of the title

Recreation Sites and ROS Alternative Maps:

We will verify location of Sahuarita on maps

We will change the legend to read "Roads" instead of "Forest Roads"

Recreation Site Maps:

We will remove the "Hunting Unit 34" label from the map – the boundary follows the highway, we will correct the hunt unit boundary to follow 83. We will remove the hunting unit boundary symbol from east of Sonoita on the map.

We will change "Trail" to "Trails" and move to under the Arizona Trail in the legend.

We will change the label in the map to "Santa Rita Backcountry Touring Area"

The Hunt Unit 34 boundary follows the Patagonia Sonoita Highway – correction to the Hunt Unit boundary will be add as described above.

ROS/Alternative Maps

We are limited to Black and White for maps at this stage. Save comment to make during the FS ID team review of the entire preliminary EIS to ensure consistent approach to maps throughout the EIS.

Will move the 83 label closer to the road

**Comments on Attachment:**

I confirmed that the current intent is to keep the road over Gunsight Pass open to the public. Until a final decision is made, it is appropriate to keep this as an assumption for analysis.

Because the current road density in this area already meets the desired condition defined in the forest plan, and there are known cultural resource issues in the area east of Hwy 83, I believe that it would be more effective for a conceptual OHV trail map to be developed as part of a Forest Service interdisciplinary process during the FS review of the entire preliminary EIS.

The section inserted below is from Table 3.14-1 of the Noise section of Chapter 3 describing typical A-weighted decibels:

Very noisy	85	Gas engine lawn mower at 5 feet. Bulldozer, excavator, or paver at 50 feet. Personal watercraft at 20 feet. Pneumatic wrench at 50 feet.
	80	Forklift or front-end loader at 50 feet. Motorboat at 50 feet. Table saw at 25 feet. Vacuum cleaner at 5 feet.

Have a great holiday weekend. I'll talk with you soon.

Steve



"Melissa Reichard"  
<mreichard@swca.com>  
05/17/2010 02:14 PM

To <rlaford@fs.fed.us>, "Beverley A Everson"  
<beverson@fs.fed.us>, "Dale Ortman PE"  
<daleortmanpe@live.com>, <dkriegel@fs.fed.us>, "Kathy"

cc

bcc

Subject Action items from Reclamation meeting

History:

✉ This message has been replied to.

**Action Items/Assignments:**

- Facility & features meeting- integrating into IDT meeting on May 24
- Debby- Research and revegetation information that FS needs to Kathy by May 28
- Melissa- Forward Holly's revegetation presentation made to Cooperators to Marcie
- Melissa- Post mine land use determinations feedback from IDT to Debby by Thursday to Melissa by Friday May 21st- for Monday's meeting
- Bev- Regional commitment for land reclamation bonding
- Melissa- merge reclamation element grids from Debby and RCC

*Melissa Reichard*

Project Administrator  
SWCA Environmental Consultants  
(520)325-9194 ofc. (520)250-6204 cell

Debby Kriegel/R3/USDAFS  
08/20/2009 11:14 AM

To Beverley A Everson/R3/USDAFS@FSNOTES,  
tfurgason@swca.com, ccoyle@swca.com  
cc mbidwell@swca.com, Melinda D  
Roth/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc

Subject Rosemont Alternatives 6B and 6C

Marcie, Trent, and I just spent an hour or two looking at alternatives 6B and 6C in the 3-D model. Trent's modeling of 6B was pretty straightforward, but modeling 6C was troublesome because:

- The drawing provided by Rosemont uses different contour intervals and shows incremental phases, so it's tough to be certain about the final top surfaces.
- The eastern lobe (near Hwy83) has an elevation label of 4925', which Trent confirmed matches the other topo lines for the proposed waste rock pile here, but this is actually **below** existing grade. It makes no sense that Rosemont would dig a crater if they're trying to lose material.
- It is not clear why Rosemont would choose build the many buttresses that end rather abruptly in this alternative. They've told me that building buttresses is expensive, so why have they chosen to do this, especially when they're leaving a crater between them? Are these buttresses somehow helpful to transporting material?

We need to speak with the engineer who drew alternative 6C to get some clarification. Once we understand what we're looking at (and verify that it's correct), we should be able to recommend 6B or 6C. It would likely be useful to get Trent a drawing that shows only the final top surface of 6C with a consistent contour interval ASAP. Does anyone know who did this drawing?

Marcie will be at the Tucson SWCA office tomorrow morning and will talk with Tom about how to get answers to these questions. The earliest possible date that Marcie, Trent, and I could reassemble to look at this again is Wed, August 26. Assuming we have a Rosemont meeting that day that starts at 9, hopefully we can meet earlier in the morning and have an answer at that time.

Thanks.



"Terry Chute"  
<tjchute@msn.com>  
07/26/2010 04:59 PM

To "Melinda D Roth" <mroth@fs.fed.us>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>, "Beverley A  
Everson" <beverson@fs.fed.us>  
bcc

Subject Re: Rosemont DEIS - Visual Quality and Recreation delays

Debby,

We know you are working hard and doing the best you can - that is all we can ask and we all appreciate your efforts. There continues to be lots of moving parts with the visual analysis and, unfortunately, no one person controls them all. Thanks for keeping us informed - please continue to do so.

Tom - Can you please check on Tuesday to see if we can get these products to Debby? Thanks.

Terry Chute

**From:** Debby Kriegel

**Sent:** Monday, July 26, 2010 4:24 PM

**To:** tjchute@msn.com ; Melinda D Roth

**Cc:** Debby Kriegel

**Subject:** Rosemont DEIS - Visual Quality and Recreation delays

It is nearly 3:30 on Monday.

SWCA was supposed to have the recreation affected environment to me today. Steve Leslie called me this morning to say he would get this to me by the end of the day. I am still waiting.

SWCA was supposed to have the visual quality affected environment, some simulations, and an outline for the environmental consequences to me on Friday. Late this morning, Marcie sent me a link to the SWCA website where she has posted some simulations. They are problematic for me to download, so I have asked for printed versions, which Melissa is working on. At noon, Marcie Bidwell sent me the affected environment without maps, graphics, or photos, and with numerous other gaps (comments with questions, references missing, and some of my comments from November not incorporated). I left her a voicemail stating that I need a more complete version. I have not seen anything for the environmental consequences outline.

The RO and me were supposed to comment on these items by this Friday, but that was based on having the whole week to review, and now I need to FedEx items to the RO, which will take another day. This is a lot of material to review very quickly, and we've already lost today.

Just wanted you to know that there continue to be problems and delays.

Debby Kriegel/R3/USDAFS  
06/08/2010 11:35 AM

To mbidwell@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont Project Record

Hi Marcie,

At a handful of meetings with Tetra Tech and others, you typed up meeting minutes. Would you please forward these documents to Melissa to put in the project record?

Thanks.

-----  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/10/2010 09:24 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject RE: Update Status of Progress RE: Visualization  
Coordination Meeting, Notes and Follow Up Questions

History: This message has been replied to.

I will give you a call this morning; it would be good to check in. I think this conversation is a good example of where we are all using slightly different language, but asking for the same thing- a dose of reality, as much as possible. Its defining what is possible to know at this time that we are waiting on. Golder, Tt, Horst, etc will be informing this.

I was thinking that Golder and Horst were mainly focusing on one alternative. SOunds like from the discusison that there may be further reaching analysis to other alternatives.

Are you available at 11:00 today?

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, February 10, 2010 8:32 AM  
**To:** Marcie Bidwell  
**Subject:** Re: Update Status of Progress RE: Visualization Coordination Meeting, Notes and Follow Up Questions

I think I'm confused about "raw" data vs benches vs "un-smoothed". I trust that you are simulating the actual conditions that would be visible at years 10, 20, etc.

Please call me if we need to discuss..

"Marcie Bidwell"  
<mbidwell@swca.com>

02/09/2010 04:58  
PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Kathy Arnold" <karnold@rosemontcopper.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Carrasco, Joel" <Joel.Carrasco@tetrattech.com>, "Krizek, David" <David.Krizek@tetrattech.com>, "Keepers, Ashley" <Ashley.Keepers@tetrattech.com>, "Trent Reeder" <treeder@swca.com>  
cc  
Subjec Update Status of Progress RE: Visualization Coordination Meeting, Notes and Follow Up Questions  
t

Hello Debby, Kathy, Tom and David,

David and I discussed both of our questions and we offer the following as the answers for your approval/agreement:

**1. Simulations by SWCA and Viewshed Analysis by Tetra Tech will use the same contours as base data so that the two tools are consistent and comparable for the analysis.**

**2. Alternatives will all be shown as "raw" contours, rather than a mix of stages of engineering resolution. Thus the MPO and Phased Tailings will be shown as the un-smoothed versions, such as Figure 11 in the Reclamation (and not use the reclamation contours presented for the MPO in Figure 12 of the reclamation plan as asked below).**

**3. SWCA will use the contours "as given" to us from Tetra Tech and show benches where designed in the "raw" format.**

**4. Tetra Tech will provide SWCA with a sketch of stormwater runoff for "watershed design" and SWCA will use these sketches to approximate the location of stormwater channels. Tetra Tech will include notes where there are major go/no go changes in the stormwater planning (anticipated).**

**5. For the SWCA simulations, reclamation will be generalized for all of the alternatives in a similar fashion.**

Thank you, (David, did I miss anything?)

Marcie

**See notes in bold below to show specific answers to questions.**

---

**From:** Marcie Bidwell

**Sent:** Wednesday, February 03, 2010 4:24 PM

**To:** 'Kathy Arnold'; 'Debby Kriegel'; Tom Furgason; Carrasco, Joel; 'Krizek, David'; 'Keepers, Ashley'; Trent Reeder

**Subject:** Visualization Coordination Meeting, Notes and Follow Up Questions

#### **MPO- Specific Questions-**

1. Please confirm **which presentation of the MPO grading we should use for vizualizations at Y10 is as presented in Figure 9 of the Reclamation and Closure Plan (RCP). SWCA will show benches as presented in Figure 9, but will use the updated contours as recently delivered by Tetra Tech.**

2. Please confirm **which presentation of the MPO grading we should use for visualizations at Y20 should be shown as Figure 11 or Figure 12 of the RCP. Figure 11, without the final reclamation grading.**

3. Please indicate what the **geodatabase layer name is that will have the "composite of yearly reclamation areas" in the data provided. SWCA will not use this "composite" for the MPO as a detailed phasing diagram does not exist for each alternative. SWCA will generalize the reclamation as starting at the bottom and adding a new ring with each year (the yearly rings will not be super pronounced by YR10).**

4. SWCA understands that the MPO should show benches as the following: waste rock, as 100 ft running slopes for each bench and approximately 100ft wide road/bench surface; and tailings as 50 ft benches and running surface; the attached image shows the output from the MPO with benches as submitted. **Please confirm if this is what we should use for final grading. As stated above, grading will be used as delivered. Generally, these descriptions apply to each alternative, with some exceptions to be noted by Tetra Tech.**

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
11/19/2008 10:05 AM

To mbidwell@swca.com  
cc tfurgason@swca.com, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont EIS - Recreation Data 

Hi Marcie:

As I mentioned, there is no recreation-specific data for the project area. However, there are 3 sources of general information that can be used to provide some quantitative analysis for recreation:

1. Arizona SCORP (Statewide Comprehensive Outdoor Recreation Plan), available at <http://pr.state.az.us/publications/index.html#SCORP>. This has lots of good Arizona and Pima County data.
2. ADOT road counters on Hwy 83. Go to <http://www.dot.state.az.us/> and on the left side, pick "Multimodal Planning" and "Traffic Data", then "Traffic Counts", open the pdf and scroll several pages to SR83. The last 2 items (Hwy 82 to 1-10) give traffic counts for the area near the proposed project.
3. The Forest Service's NVUM (National Visitor Use Monitoring), which provides recreation data for the Coronado National Forest. Go to <http://www.fs.fed.us/recreation/programs/nvum/> and select the report for the Coronado.

Also, I've been thinking about what you said about getting other resources involved and/or supporting an alternative with radically different waste rock shaping. I talked to Bev about this and she thinks the key resources ready to proceed with this are recreation, scenery, and wildlife. She thinks the other resources may be interested later, once the ideas are farther along. Then I spoke with wildlife biologist Larry Jones and he is VERY interested in being involved in crafting an alternative like this. However, he is not available until December. He would like to know what we find out from Dale and Daniel might be possible. Then he will join us for the next few steps...whatever they are!!

Thanks!

Debby



"Marcie Bidwell"  
<mbidwell@swca.com>  
06/25/2009 11:44 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Charles Coyle"  
<ccoyle@swca.com>  
cc "Lara Mitchell" <lmitchell@swca.com>

bcc

Subject Bounds~ Map boundaries- Visuals and Land use

History:  This message has been replied to.

Debby and Charles,

Incorporating feed back and input from both of you and multiple sources, here is the final version of hte bounds of analysis.

Please let me know if you have any questions!  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, June 16, 2009 9:04 AM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Re: Bounds~ Map boundaries- Visuals and Land use

Marcie: Here are my comments (in red). Thanks. Debby

#### **VISUAL RESOURCES:**

1. The temporal bounds of analysis for Visual Resources is intended to include the area that may impact or be impacted by the proposed project. As such, the temporal bounds of analysis include Construction, Operations, Reclamation, and Post-Closure. Additionally, within the Operations time boundary, a sub-boundary for visual resources will include the completion reclamation of the ~~tailings berm~~ perimeter buttress that is intended to screen the mine operation. *(the last sentence is not necessary, as this will be covered within the other boundaries, but if you think it's important to mention, that's fine)*

2. The geographic bounds of the visual resource analysis is defined as (1) the project site (project boundary), (2) ~~Nogales Forest Unit~~, Santa Rita EMA (3) Coronado National Forest, and (4) Santa Cruz County and Eastern Pima Counties.

#### **LAND USE:** Is this a new issue?

1. The temporal bounds of analysis for Land Use is intended to describe the land use planning that may impact or be impacted by the proposed project. As such, the temporal bounds of analysis include Construction, Operations, Reclamation, and Post-Closure.

2. Geographic- The potential impacts to Land Use Resources include the project area and surrounding lands as they are managed for land use, and are defined as (1) the project site (project boundary), (2) Nogales Forest Unit, (3) Coronado National Forest, and (4) southern Santa Cruz and northern Pima Counties.

**D R A F T**

**Simulations Needed for Rosemont Analysis**

July 15, 2009

Project not visible (no simulations needed?)

- Madera Canyon (0)
- San Xavier (0)

***Total 0 simulations***

Project effects very small - Very easy simulations – Only simulate worst year

- Tucson (2 locations) – only Sycamore visible (2)
- Vail – only Sycamore visible (1)
- Corona de Tucson – only Sycamore visible (1)
- Sahuarita – only Sycamore visible (1)
- Sonoita (1)
- Green Valley (I-19) – only Sycamore visible (1)
- Las Cienegas Conservation Area (1)
- Wildernesses (2 simulations) (2)

***Total 10 simple simulations***

Project effects moderate – Simulate worst year and post-reclamation

- Hilton Rd. (2)
- Box Canyon (2)

***Total 4 simulations***

Project effects very large - Simulations will require extensive work to properly show pit, plant, waste rock and tailings, roads, utilities, etc. with much foreground detail. Need to simulate appropriate phases (construction, year 5/10/15/20, closure, and/or full reclamation)

- Arizona Trail (1 simulation showing view along trail at the toe of ~700 ft waste rock slope and 1 simulation showing view of alternative 1)
- Hwy 83 (2 KOPs)
- FS Roads and/or OHV trails or staging area (2 KOPs)

***Totals: 2 simulations for Arizona Trail.***

***4 simulations for other locations on forest x 7 phases maximum = 28 total possible simulations. Select ½ of these to finalize. Total = 14.***



**Beverley A  
Everson/R3/USDAFS**  
04/21/2010 12:36 PM

To karnold@rosemontcopper.com, mrechard@swca.com,  
Debby Kriegel/R3/USDAFS@FSNOTES  
cc Melinda D Roth/R3/USDAFS@FSNOTES  
bcc

Subject Fw: Comments on Tetra Tech's Viewshed Analysis Reports

History: This message has been replied to.

Kathy,

Please see Debby's comments on the recent viewshed analysis reports, below. Mel, I'm cc'ing to you for the admin record.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 04/21/2010 12:23 PM -----

**Debby Kriegel/R3/USDAFS**  
04/21/2010 11:26 AM

To Beverley A Everson/R3/USDAFS@FSNOTES  
cc  
Subject Comments on Tetra Tech's Viewshed Analysis Reports

I have reviewed the 6 "Viewshed Analysis" reports from March. Please forward my comments to Rosemont. Thank you.



Review\_Rosemont\_Reports\_Viewshed\_Analysis\_MPO\_and\_Alternatives.doc



File code: 2380

Date: April 21, 2010

To: Bev Everson, Project Manager

This letter provides feedback on 6 "Viewshed Analysis" reports dated March 8, 2010. The reports were prepared by Tetra Tech and provided by Rosemont Copper Company.

These reports provide cumulative analysis of visibility for the MPO and 4 alternatives from a group of Key Observation Points (KOPs), and an assessment of how a partial pit backfill alternative would be different.

The reports are helpful; they provide additional information for visual resource analysis and should be useful as SWCA begins creation of visual simulations. I do, however, have some comments:

1. Label all of the reports "Draft Cumulative Viewshed Analysis for Select KOPs" rather than "Viewshed Analysis". Alternatives for this project are still being refined and therefore these reports should all be considered draft for now. Once alternatives are approved and better defined, these reports should be revisited and updated as needed. Additionally, these are not comprehensive viewshed analyses, but rather cumulative analyses for specific KOPs, so the title should clearly state this. In the final versions, be sure to run the visibility using proposed contours for all mine elements including the heap leach, plant site grading, access road grading, diversion channels, etc.
2. Replace the sentence in the first paragraph of each report that reads "This analysis quantifies the visible disturbance areas associated with each of the alternatives" with "This analysis provides cumulative analysis of visible disturbances associated with each of the alternatives from select KOPs." These are not comprehensive viewshed analyses, nor do they provide quantities (acres).
3. Explain why KOPs 4 and 5 were not used (something like "Per FS and SWCA direction, only KOPs within 5 miles of project were used to focus the results on foreground and middleground visibility").
4. On the Scholefield/McCleary report's ultimate year map, the visibility (colors) within the pit are obscured by the strong contour lines. Correct this to be consistent with the other maps (showing the pit outline only).
5. On the Sycamore/Barrel report, section 2.0 does not indicate that KOP 9 (Sahuarita Road) was used (though the maps indicate that it was included).
6. Include a statement on each report that indicates the metadata/process used for the mapping, such as:

*This viewshed analysis utilizes GIS (program) to select the cells from a digital elevation model (DEM) as visible or non-visible from one or more observation points or lines. The viewshed for each KOP observation point was derived from the United States Geologic Society's xxx Quadrangle of 10 × 10 meter cell resolution. Viewshed analysis parameters were defined for each KOP to account for viewer height and to focus the analysis field of*



*view. These parameters produce a more accurate viewshed result, and also reduce processing time and file size. The parameters used for this analysis include xxxxx.*

Thank you.

/s/ Debby Kriegel

DEBBY KRIEDEL  
Forest Landscape Architect



"Marcie Bidwell"  
<mbidwell@swca.com>  
03/01/2010 11:09 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Test run of vegetation

This is the MPO, using all of the contours that Tt provided in their original data set and assuming that each one is a channel. The vertical drop structures are just superimposed, in one location as a test.

Veg, educated opinion (more solid than a guess, but still no other source).

Using San Manuel, at 3-4 years of growth on their pile as spotty veg, mostly filled in; and San Manuel test plots in other locations where 8-10 yrs of growth are showing some trees, very spotty in wet locations; and Narraganset, at 50 yrs with no purposeful reveg (natural selection) showing good shrub cover.... (so backing that up in time).

I hope to document it soon with more research on my own. I have not followed up on your most recent request/discussion with Kathy. Need to contact Holly, the grad student researcher to see if she can fill in a few more examples from the site.

BUt thats what I got to work with. Thought we would mock it up and see what it looks like.

Will proceed (including with the research to document how we picked this veg).  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, March 01, 2010 10:45 AM  
**To:** Marcie Bidwell  
**Subject:** RE: Test run of vegetation

Hi Marcie:

Is this the MPO, or the phased tailings alternative? You mention that it's the MPO (last line in your first message below), but if this is the MPO, how did you get stormwater benches for it?

How did you determine the size of plants/reveg for 10-13 years of growth and 20 years of growth? They look about right to me...did you get some input from someone, or use an educated guess?

I think it will be very worthwhile to complete one whole simulation. It will generate good discussion on benches and landforming, revegetation, pit color mitigation, and many other things. So yes, proceed!

Thanks !!

Debby

"Marcie Bidwell" <mbidwell@swca.com>

03/01/2010 09:47 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>

cc

Subject RE: Test run of vegetation

Thats correct, just a sliver, so that we can test the concept; if you think this works, we can take it to the rest of the view.

Should we proceed?

Thanks for the update on stormwater and Golder's report. I realize lots of us are depending on that information, but just wanted to make sure that you were aware that we were still waiting.

Thanks!

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]

**Sent:** Friday, February 26, 2010 12:49 PM

**To:** Marcie Bidwell

**Subject:** Re: Test run of vegetation

These look good. Were they meant to be only a small sliver of the view (i.e., not the whole 110 degree view)?

"Marcie Bidwell"  
<mbidwell@swca.com>

02/26/2010 11:52 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Dale Ortman PE" <daleortmanpe@live.com>, "Tom Furgason" <tfurgason@swca.com>

cc

Subjec Test run of vegetation

t

Debby, Dale and Tom,

While we are waiting on direction on stormwater, we are refining our technique for showing vegetation on the waste rock.

Please find two samples that show:

- vegetation gradient from 20yrs growth at the bottom to 10-13 years growth at the top
- benches at every contour that Tt data currently shows (every 50 feet)
- vegetation concentration on the benches and associated with water drainage courses across the slope.
- a rock course, not sized or designed YET, for stormwater drop structures- these would be positioned and sized according to Tt direction for "typical" stormwater placement.
- View 4- shows less blue/grey "atmosphere" affect, the View 5, shows more "atmosphere" (which refers to the tendency for objects in the distance to be affected by haze and distortion, to appear more blue-greyish, like the Santa Rita ridge in the background).
- Pit colors- not shown. We are working on that separately.

Future simulations will show this patchy and variable vegetation randomly distributed horizontally across the slopes to respond to aspect, moisture concentration, and other factors of randomness that affect regrowth.

Please let me know your thoughts or to schedule a time when we can discuss these examples. I would like to forward them on to Tt and Rosemont after we have reviewed them and are comfortable with them internally.

Thanks!

Marcie

---

**From:** Chris Loftus [mailto:chris@loftuslandscapestudio.com]  
**Sent:** Friday, February 26, 2010 11:03 AM  
**To:** Marcie Bidwell  
**Subject:** FW: Next Steps~ thought I would write it up for clarity

Images attached this time...

Chris Loftus, RLA, ASLA  
Loftus Landscape Studio  
landscape architecture | sustainable site strategies  
970.903.2930 | [www.loftuslandscapestudio.com](http://www.loftuslandscapestudio.com)

---

**From:** Chris Loftus [mailto:chris@loftuslandscapestudio.com]  
**Sent:** Friday, February 26, 2010 11:02 AM  
**To:** 'Marcie Bidwell'  
**Subject:** RE: Next Steps~ thought I would write it up for clarity

Marcie,

Attached are two new sample images. Number 4 shows the darker veg and clean edge; number 5 adds a gray filter over the entire waste rock slope.

I'll be checking email again late this afternoon.

Thanks,

Chris Loftus, RLA, ASLA  
Loftus Landscape Studio  
landscape architecture | sustainable site strategies  
970.903.2930 | [www.loftuslandscapestudio.com](http://www.loftuslandscapestudio.com)

---

**From:** Marcie Bidwell [mailto:[mbidwell@swca.com](mailto:mbidwell@swca.com)]  
**Sent:** Thursday, February 25, 2010 3:42 PM  
**To:** Chris Loftus  
**Subject:** Next Steps~ thought I would write it up for clarity

**To Recap-**

- **KOP 2- UPDATED** (changed my mind) Please do a version of the darker green to the veg, and to clean up the edge by the road now. I will wait to receive that to send it to Debby for feed back. (as long as you think you have time this week)
- **KOP 6-** apply soils and grasses to this KOP. Think about if other veg would be visible. Benching would be faint, I would think from this distance.
- **Pit Colors-** When you receive from Mike, apply colors/textures to the full pit (with no tails in front of it). Use the PDF of rock colors for a guide. However, colors would be several shades lighter, due to lack of varnish and exposure. Assume that the pit has been exposed for 20 years of weathering (and so bench failures, etc will be in the image, like our reference photography).

**Waiting on:**

- Stormwater benching direction for KOPs 1-3, possibly others.
- 3D data from Tetra Tech for other alternatives (so far we are working on the Alt 2, MPO only)

Marcie Demmy Bidwell

Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

No virus found in this incoming message.  
Checked by AVG - [www.avg.com](http://www.avg.com)

Version: 9.0.733 / Virus Database: 271.1.1/2709 - Release Date: 02/25/10 00:34:00

Debby Kriegel /R3/USDAFS  
05/27/2009 12:18 PM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject June 4th Meeting with Rosemont's reclamation team (Tetra  
Tech and Sage)

Marcie,

Bev just stopped by to tell me that the meeting is on. You weren't planning to be town next week, right? Hopefully immediately after the meeting I'll have a chance to let you know how things went, but if the meeting goes until noon I'll be rushing to the airport (and will be out until June 15). Did you have any specific issues or questions for me to bring up? I'm assuming that they'll show us what they're working on and I'll give them some feedback.

Some of my concerns/questions will be:

1. Whether Sage's watercolor picture of the reshaped piles is feasible and has had a full reality check by Rosemont
2. What Tetra Tech thinks is technically feasible in terms of recontouring, land sculpting, etc.
3. How they are using the data we gave them (KOPs, CLs, etc.) - by the way, did you get them evaluation criteria and affected environment stuff??
4. The style of their simulations (so theirs and SWCA's can be compatible) ←

Debby

show to  
Marcie?!

"Marcie Bidwell" <mbidwell@swca.com>



"Marcie Bidwell"  
<mbidwell@swca.com>  
05/26/2009 02:31 PM

To "Debby Kriegel"  
cc  
Subject June 4th?

June 4 Mtg

Have you heard anything about that meeting happening?  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
515 East College Avenue  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

- ① Go thru Action Items
- ② Get 2' contour topo from TT
- ③ Discuss sim format in EW (11x17 foldouts?)
- ④ Review thoughts on this page (5/27)
- ⑤ Eval Crit, etc. from Marcie
- ⑥

Debby Kriegel /R3/USDAFS  
05/07/2009 02:27 PM

To jlyndes@sagelandscape.com, kavid.krizek@tetrattech.com,  
Beverley A Everson/R3/USDAFS@FSNOTES,  
tfurgason@swca.com, mbidwell@swca.com, Salek  
cc Debby Kriegel/R3/USDAFS@FSNOTES

bcc

Subject Rosemont - Action Items from May 7 meeting

History: This message has been forwarded.

Action items from the flipchart at today's meeting:

1. Meeting in 3 weeks (tentative date = morning of June 4th)
  - Progress meeting
  - Sage & Tetra Tech to provide modified proposed action: stormwater, reclamation plan, and visual work
  - USFS will provide Feedback
  - Sage will provide examples of other simulation projects
2. SWCA will provide Tetra Tech and Sage with (1) KOP GPS points ASAP, and (2) Evaluation Criteria and Affected Environment in 3 weeks
3. Tetra Tech will provide the USFS (Salek) and SWCA with new survey topo (2' contours) and oblique aerial photos by May 15
4. USFS will provide Tetra Tech and Sage with Concern Level 1 & 2 travelways by May 15
5. USFS will provide desired condition for project area by May 15

Thanks everyone!

Tom: Please forward this to Dale...I don't have his email address.

Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
 <mbidwell@swca.com>  
 07/14/2009 07:28 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
 cc  
 bcc

Subject Table of Eye Ball Miles

History: This message has been replied to.

**Table 5. Anticipated Visual Impacts for Project Segment and Components.**

**Segment VRM Class Contrast Rating Miles in view Minutes in View ADT<sup>1</sup> Est. Traveler Visual Effects**

**(minutes X ADT) Impact Determination<sup>2</sup>**

1	II and III	Weak	4.4	5.3	1,430	7,579	Low Impact	
1A	II and III	Weak	7.0	8.4	1,430	12,012	Low Impact	
2	II and III	Weak - Strong	2.0	4.0	unknown	unknown	Moderate Impact	
2A	II, III, and IV	Weak - Strong	4.7	9.4	unknown	unknown	Moderate Impact	
Paradise Substation and Alternative			III	Moderate	N/A	N/A	unknown unknown Low Impact	
3	II	Weak - Moderate	5.3	7.1	unknown	unknown	Moderate Impact	
4	II	Moderate - Strong	1.0	1.2	1,620	1,944	Strong Impact	
4A	II	Weak - Moderate	1.0	1.2	1,620	1,944	Moderate Impact	
5	II and III	Weak - Moderate	6.8	8.2	2,230	18,286	Moderate Impact	
6	III and IV	Weak	1.0	0.9	2,280	2,052	Low Impact	
6A	III	Weak - Strong	13.6	13.7	2,280	31,236	Strong Impact	
Jonah Substation			IV	Weak	0	0	0	No Impact

<sup>1</sup> Average Daily Traffic; <sup>2</sup> determined based on Contrast Rating, Visual Effects, and VRM class objectives

Marcie Demmy Bidwell  
 Environmental Planner  
 130 Rock Point Drive, Suite A  
 Durango, Colorado 81301  
 Office: 970.385.8566  
 Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
01/07/2010 10:03 AM

To tfurgason@swca.com  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Melinda D  
Roth/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Fw: Rosemont - Schedule for Recreation and Visual Quality  
Work

Please send me a copy of Steve's SOW. I'd like one for Marcie's work too. I currently have no idea of what they intend to get done before the upcoming deadlines for draft EIS.

Thanks.

----- Forwarded by Debby Kriegel/R3/USDAFS on 01/07/2010 10:00 AM -----



"Stephen Leslie"  
<sleslie@swca.com>  
12/18/2009 12:54 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>  
Subject RE: Rosemont - Schedule for Recreation Work

Debby

I've left you two voice messages regarding the recreation SOW. I've already submitted a SOW to Tom based on your requested list of tasks.

Steve

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, December 18, 2009 11:52 AM  
**To:** Stephen Leslie  
**Cc:** Tom Furgason; Debby Kriegel  
**Subject:** Rosemont - Schedule for Recreation Work

Steve,

I haven't heard from you since I submitted my comments on your draft Affected Environment chapter on November 5. When will you provide a revised draft?

Please put together a proposed schedule for completing recreation work, and submit it to me by January 4th. Attached is a list of tasks; you'll need to assign a date to each task. Most should look very familiar to you, and hopefully some you've already done. As you know, there is a January 15 DEIS internal review and the DEIS goes to the printer on March 15. There is a lot of recreation work to do.

I'm also attaching the formal comments from the Arizona Trail Association.

If you are having problems making progress on this project, please let me and Tom know immediately.

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Terry Austin

02/26/2010

07:47:11 AM



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/24/2010 12:06 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Terry L Austin"  
<tlaustin@fs.fed.us>, "Walter Keyes" <wkeyes@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Roads and Trails

Debby,

Can you tell me if the CLs have changed since the version that you sent dated September 15th, 2009?

Additionaly, I recommend that these be forwarded to EPG for their analysis process, as CLs are central to their work as well.

Thanks,  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, February 22, 2010 2:54 PM  
**To:** Terry L Austin; Marcie Bidwell; Walter Keyes  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Roads and Trails

Attached is the latest map of concern levels for travelways in and around the Santa Ritas.

Terry: Would you please send this shapefile to Marcie?  
J:\fsfiles\office\gisprojects\sup\_off\dkriegel\rosemont\concllev\SantaRitaConcernLevels2010.shp

Marcie: Please be sure you're using this version for SMS analysis.

Walt: This map shows the relative scenery/rec importance of roads and trails in the Santa Ritas. Will you be working on recommendations for reconnecting some of the roads around the project area? Rosemont proposed doing this in the MPO (see section 3-5 and figure 3-7), but the actual locations they show on their maps really don't connect much (Kathy says these maps are conceptual). Each alternative will need some new road segments, and we might also want a post-mine road map of some sort. Let's talk about this when you have a few minutes.

Thanks.



"Melissa Reichard"  
<mreichard@swca.com>  
06/02/2010 04:06 PM

To <dkriegel@fs.fed.us>  
cc  
bcc

Subject Sorry for the delayed response

History:

✉ This message has been replied to.

Debby-

I got your message and the info you have been sending me to put in the record are great! Thanks for working on it!! Lara was out yesterday, so I just found out about the SDCP GIS layers. We actually don't have any layers for the SDCP at all. If you get some from Pima County and want to send them our way, that would be great.

I hope that helps.

*Melissa Reichard*

Project Administrator  
SWCA Environmental Consultants  
(520)325-9194 ofc. (520)250-6204 cell

CONFIDENTIALITY NOTICE: The information in this email is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and/or exempt from disclosure under applicable law. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.



sleslie@swca.com

07/02/2010 06:55 AM

Please respond to  
sleslie@swca.com

To "Debby Kriegel" <dkriegel@fs.fed.us>

cc

bcc

Subject Re: Recreation Affected Environment

History:

✉ This message has been replied to.

Absolutely. I'll get the maps inserted when I get back next week so you'll have them when you get back. Enjoy your time off. Steve

Sent via BlackBerry by AT&T

**From:** Debby Kriegel <dkriegel@fs.fed.us>  
**Date:** Fri, 2 Jul 2010 07:50:36 -0600  
**To:** Stephen Leslie <sleslie@swca.com>  
**Subject:** Re: Recreation Affected Environment

Steve,

Thanks for working on this. I would like to see the maps included before I review it again. I'm in on Tuesday, but then I'll be out of the office until July 13 (first time I've taken more than a day off this year!!). Can you provide a version with maps by the 13th?

Hope you have a happy 4th of July weekend!

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
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dkriegel@fs.fed.us

"Stephen Leslie" <sleslie@swca.com>

07/01/2010 04:29 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>

cc "Jonathan Rigg" <jrigg@swca.com>, "Tom Furgason" <tfurgason@swca.com>  
Subject Recreation Affected Environment

Debby -

I have incorporated all of your changes and updated information to address your additional comments and requests from your email last week.

The maps are done, just haven't inserted them into the text. I'll be out of the office tomorrow, but can answer any additional questions next week.

Thanks,  
Steve

# VISUAL ANALYSIS COORDINATION MEETING

January 29, 2010  
Coronado National Forest  
Tucson, Arizona

**Attendees:** Debby Kriegel, *USFS Landscape Architect*  
Kathy Arnold, *Rosemont Copper Company*  
David Krizek, *Tetra Tech*  
Joel Carrasco, *Tetra Tech*  
Tom Furguson, *SWCA Environmental Consultants*  
Marcie Bidwell, *SWCA Environmental Consultants*

## DISCUSSION

### Topic

#### Tetra Tech Scope

- Viewshed Analysis- complete viewshed analysis for 6 KOPs within middleground distance
- Simulations of Phased Tailings Alternative with Vegetation- two growths (mature and immature vegetation)
- Simulations/Illustrations as Aerial/Oblique views (2 orientations) for Phased Tailings Alternative showing "opportunity" and reclamation plans
- Engineering of conceptual massing for other alternatives

#### SWCA Scope of Work

- Seen Area Analysis – extent of visibility for each alternative
- Simulations (3 KOPs)- 10YR and 20YR
- Land Form Diagrams- (5 KOPs)- 20 YR
- Line of Sight/Section Diagrams for Not Visible KOPs- will vary by alternative
- Visual Specialist Report & EIS

#### Coordination of Data

- KOPs- combined selection to include 8 selected KOPs (see table attached)
  - Tetra Tech to recompute the viewshed analysis for 6 KOPs, and submit as Multiple KOP diagrams to USFS for use in the visual analysis by SWCA.
- Alternatives Contours (3D)- 10 Yr and 20 Yr for KOP 1, 2, and 3 (44MM, 46MM, and Arizona Trail)
- Facilities 3D- Mine operations, transmission, access roads- 5-10 days
- Reclamation grading- facilities footprint- to follow 1-2 weeks
- Reclamation standards for simulations-
  - Soil colors to be simulated from the arkos and helia conglomerate used in the revegetation test plots.
  - Tetra Tech to develop "typical" standards for waste rock and tailings to be applied to all alternatives.
  - SWCA to use 100 ft benches and approximate water courses for typical shaping.
  - SWCA to use typical standards and hillshade to adapt vegetation to south and north slopes.

- o SWCA to use examples photography from site photography submitted by Rosemont (Rosemont test plots, Narragansett, San Manuel, and others) and SWCA field photography to show examples of vegetation

#### KOP COMBINED LIST- EAST ALTERNATIVES

KOP NAME FINAL	Location	USFS KOP Name	TT KOP Name
KOP 01	MM 46- Picnic Table Pull Off	KOP 4	Replaces KOP-1
KOP 02	MM 44- Scenic Pull Off	KOP 12	Replaces KOP-3
KOP 03	Arizona Trail	KOP 5	Replaces KOP-4
KOP 04	Mount Wrightson- Four Spring Trail	Replaces KOP 17	KOP-11
KOP 05	North of Sonoita Junction	KOP 8	KOP-12
KOP 06	Las Cienegas BLM Kiosk/ Empire Ranch Entry	KOP 11	(new)
KOP 07	Hilton Ranch Road rural residential area	KOP 16	(new)
KOP 08	Box Canyon Road/ Arizona Trail Crossing	(new)	KOP-7

#### KOPS- WEST ALTERNATIVES OPTIONS

KOP NAME FINAL	Location	Sensitive Viewers	USFS KOP Name	TT KOP Name
KOP 9	Sahuarita Road	Local, Residences	KOP 20	
KOP 10	Madera Canyon	Recreation	KOP 1	
KOP 11	Duval Mine Road Over Pass- US 19	Local, Residences, Tourism	KOP 2	
KOP 12	Corona del Tucson	Rural Residential	KOP 3	
KOP 17	San Xavier- southern Tucson, tribal lands	Tribal, residential		
KOP	Tucson (options)	Residential/industrial		
KOP				
KOP				

#### Next Steps

- Tetra Tech to post Alternative Data with Z-values on their FTP site.
- SWCA is to inform the USFS and RCC when we use information provided by Tetra Tech so that Rosemont may submit information to the Admin Record officially.
- Tetra Tech will compute Viewshed Analysis for the 6 KOPs within the middleground and submit maps (1) per alternative and send shape file data to the USFS for inclusion in the EIS specialist report.
- SWCA will refine simulations to show:
  1. revegation as phased over 1- 10 years, following the MPO plan and estimating other alternatives. Show stronger growth of trees on bench tops and north facing slopes.
  2. soils colors to be similar to arkos and helia conglomerate
  3. rock colors as Tetra Tech color diagram will show
  4. benches- 50 ft benches in pit, and piles with 100ft benches with 100ft rises in between or as shown on CAD layers for alternatives.
  5. Transmission alignments to follow over Santa Ritas and directly to site as in Barrel Only alignment.
  6. Follow Tetra Tech "typical" treatments for stormwater and revegetation on other alternatives.

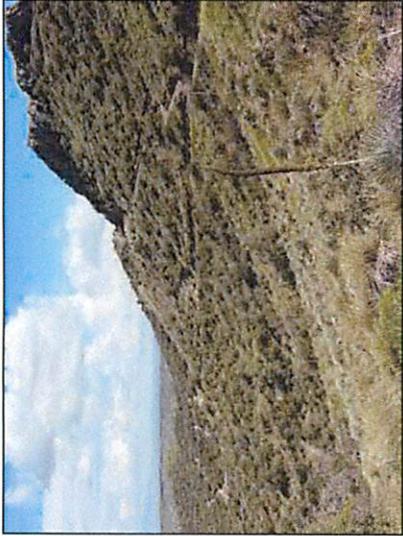
## Immediate Action Items

Owner	Action Item- <b>BOLD</b> indicates updates or <b>NEW</b> actions	Deadline
David Krizek	1. Tetra Tech will post color diagram and pit run colors on the Tetra Tech FTP site.	
Rosemont Kathy Arnold	2. Call Holly and let her know that SWCA would like to know the veg-shrub-tree mix for the EIS analysis.	
Rosemont Jaime/Jeff/Holly	3. Submit (or request that Holly submit) photographic vegetation record of revegetation observations on the site.	
Rosemont Kathy Arnold	4. Submit upcoming agave report and updated seed mix for inclusion in the EIS.	
SWCA/Marcie Bidwell	5. Request mining photography from USFS (Bev) and SWCA (Tom, Dale) from the mine tours regarding vegetation and other research photography for use in simulations.	
Tetra Tech/ David Krizek	6. Tetra Tech to supply SWCA with "typical" benching and stormwater design standards for SWCA to include on alternatives without designed features for (1) tailings and (2) waste rock to guide SWCA's simulations.	
Tetra Tech/ David Krizek	7. Tetra Tech to complete the "reclamation element table" for SWCA (attached) to guide assumptions within the simulations for the Specialist Report and EIS.	
SWCA/Marcie Bidwell	8. Communicate back to Rosemont (Kathy Arnold) what pieces Tetra Tech has provided as data to make sure these pieces are officially submitted to the record.	
Tetra Tech/David Krizek	9. Compute Viewshed Analysis for 6 KOPs within the middle ground (KOP 1, 2, 3, 6, 7, 8) and submit one map with combined results to USFS.	
SWCA/Marcie Bidwell	10. Submit minutes from meeting to admin record.	

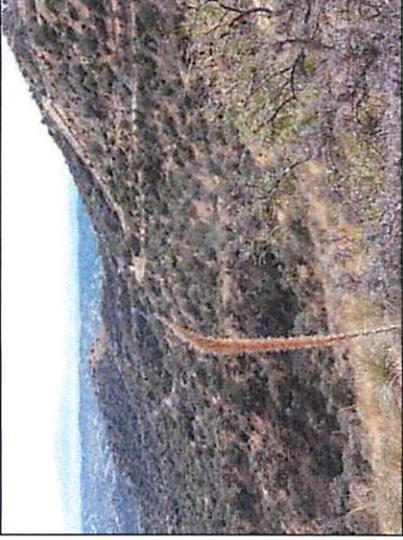
**Reclamation Element**

<b>Time</b>	<b>Slopes- Degree &amp; Percent Reclaimed</b>	<b>Soil</b>	<b>Vegetation</b>	<b>Facilities</b>
YR 1				
YR 2				
YR 3				
YR 4				
YR 5				
YR 10				
YR 20				
YR 50				

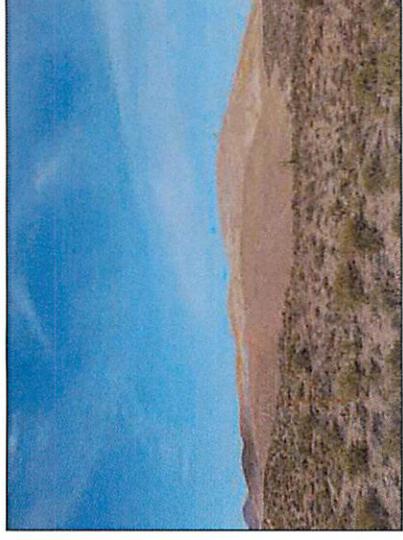
# PHOTOGRAPHIC REFERENCE PHOTOGRAPHY SUBMITTED BY SWCA FOR GUIDING SIMULATIONS



Narragansett, natural seeding (1951) green season

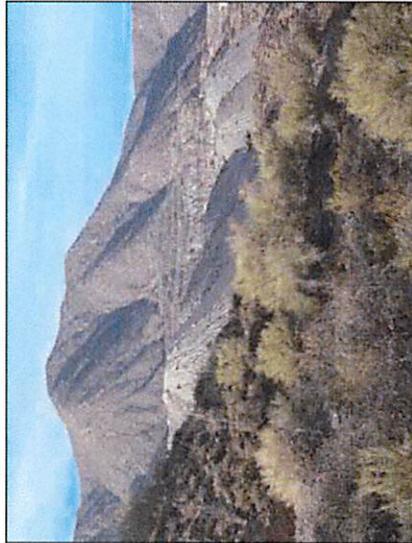


Narragansett, dry season



San Manuel, seeded in foreground (2004)

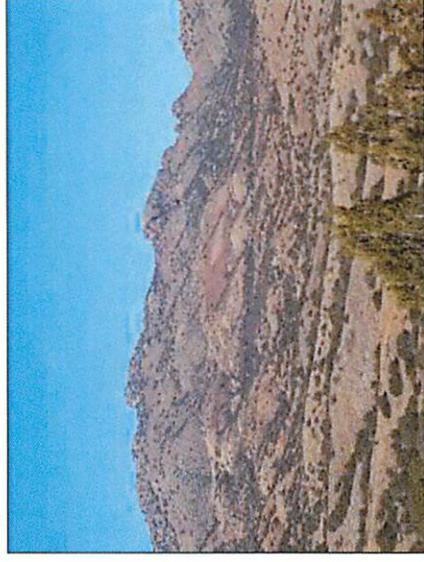
## EXAMPLES OF REVEGETATION- SPECTRUM OF TIME, INTENTION, AND NATURAL SELECTION



Christmas Tree, limestone bench excavations



Rosemont vegetation plots, December 2009



## EXAMPLES OF LIMESTONE AND SOIL EXCAVATIONS

Beverley A Everson /R3/USDAFS  
08/11/2008 01:46 PM

To Reta Laford/R3/USDAFS@FSNOTES, Teresa Ann Ciapusc/R3/USDAFS@FSNOTES,  
John Able/R3/USDAFS@FSNOTES, Andrea W Campbell/R3/USDAFS@FSNOTES,  
Jennifer Ruyler/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES, Walter Keyes/R3/USDAFS@FSNOTES, Salek  
Shafiqullah/R3/USDAFS@FSNOTES, Debby Krieger/R3/USDAFS@FSNOTES, Keith  
L Graves/R3/USDAFS@FSNOTES, Deborah K Sebesta/R3/USDAFS@FSNOTES,  
Tami Emmett/R3/USDAFS@FSNOTES, George McKay/R3/USDAFS@FSNOTES,  
Robert Lefevre/R3/USDAFS@FSNOTES, Shane Lyman/R3/USDAFS@FSNOTES, Eli  
Curiel/R3/USDAFS@FSNOTES, Christopher C LeBlanc/R3/USDAFS@FSNOTES,  
William B Gillespie/R3/USDAFS@FSNOTES, Mary M  
Farrell/R3/USDAFS@FSNOTES, Alan Belauskas/R3/USDAFS@FSNOTES, Kendall  
Brown/R3/USDAFS@FSNOTES, Thomas Skinner/R3/USDAFS@FSNOTES, Larry  
Jones/R3/USDAFS@FSNOTES, Kendra L Bourgart/WO/USDAFS@FSNOTES, Janet  
Jones/R3/USDAFS@FSNOTES, Roxane M Raley/R3/USDAFS@FSNOTES, Heidi  
Schewel/R3/USDAFS@FSNOTES, tfurgason@swca.com, mreichard@swca

cc

bcc

Subject tour date mix-up! SILVER BELL OPERATION THIS WEEK, San Manuel next week -  
meet at 8:30 this Wednesday

Hi Everyone,

I mistakenly told some of you on the bus last week that this week's tour was to San Manuel to see reclamation there. I was off by a week; this week's tour is to the Silver Bell Mine operation, and next week is San Manuel. We will be departing by bus for the mine from the front of the Federal Building this Wednesday morning at 8:30.

Silver Bell is a copper operation (in spite of its name), and is an example of a leaching operation similar to what will be occurring at the Carlotta operation once they are up and running (for those of you that attended that field trip). At Silver Bell, they use a weak solution of hydrochloric acid to dissolve copper ions from the ore and electricity to extract the copper from solution and on to inert anodes (plates of unrefined impure metal). The then copper-coated plates are called cathodes.

FYI, the copper-laden solution is called pregnant leach solution or PLS. The plating occurs in an SXEW (solution extraction/electrowinning) plant. For those of you that were on the Rosemont field trip the electrowinning process is analogous to the nail that was dipped into the drop of hydrochloric acid the company geologist had put on a piece of ore, causing the nail to be coated with copper.

Can anyone tell me what type of ore lends itself to this type of processing?? What is the other type of ore, and how is it processed?

Here's a tougher question; how do each of the ore types form? Also, would the proposed Rosemont operation be doing both types of ore processing throughout the life of the operation? Why or why not?

Bev

Debby Kriegel/R3/USDAFS  
03/19/2009 12:44 PM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont design exploration - possible process 

This might work for step 3

1. 3a and 3b: no change, do first
2. 1/2 day virtual (teleconference or similar) strategy meeting with LAs, wildlife, hydrologists (and maybe mining specialists) to
  - Show results of 3a and 3b
  - Brainstorm current resource values and landscape patterns
  - Identify opportunities (e.g., more natural landforms, save some drainageway habitat, catch runoff, avoid archy sites, warping/ledges) and constraints (bigger footprint, operational costs, max slopes) for resources
  - Demonstrate some concepts with simple clay model
3. LAs go to computer specialist to create one possible option
4. Another 1/2 day virtual meeting with all to show results and discuss options
5. LAs go back to computer specialist to create other options as needed
6. Select tentative key viewpoints...



"Marcie Bidwell"  
<mbidwell@swca.com>  
11/02/2009 04:06 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject Visual Proposal

History:

 This message has been replied to.

<<Visual\_Resource\_Proposal\_2009-17-15 Update.pdf>> <<Visual\_Resource\_Proposal\_2009-17-15 Update.xls>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual\_Resource\_Proposal\_2009-17-15 Update.pdf Visual\_Resource\_Proposal\_2009-17-15 Update.xls

Rosemont EIS - Visual Funding Update 07/16/2009 on Tasks Remaining unfunded from 4/16/2009 DRAFT Strategy for Visual Resource Analysis									
<i>Note: This document summarizes update on funding for unfunded tasks, responsibilities, and schedule requested by USFS as of 4/16/2009.</i>									
<i>Italics = Alternatives Analysis funded; BOLD = Simulations Request (07/16/2009 for MPO only; Regular Font = Not funded 4/16 and no additional request to date.</i>									
Task	Description of Work	SWCA responsibilities	USFS responsibilities	Proposed Completion Date	Associated EIS Timeline Step & Date	Status	Within Current Visuals Contract	Notes	
1g	Conduct site visits of other mine sites to glean best management practices for project proposal	Visit mining sites; arrange tours for USFS, SWCA and others	Attend site visits as appropriate	Summer 2009		Not funded as of 4/15/2009	N		
3a	Identify alternate locations to potentially place waste rock and tailings (unseen or seldom seen locations with few wildlife, archaeology, and other resource concerns). Consider using a McHarg-like mapping process.	Provide maps. Site visits as needed.	Provide wildlife and archaeology data as needed and review maps		Alternatives	Alternatives Analysis Funding	N	Consider visual, wildlife, cultural, watersheds, 4 springs, riparian, recreation sites, TES, access, etc.	
3b	Create 3-D computer simulations of existing landscape and proposed mine.	Provide simulations	Review simulation		Alternatives	Simulations MPO Change Order Request	N		
3d	Prepare a presentation for the workshop to show site analysis and existing conditions, topography, and landscape patterns for workshop. Incorporate products from step 3a and 3b.	Prepare presentation	Review presentation		Alternatives	Alternatives Analysis Funding	N		
3e	Facilitate a workshop with USFS landscape architect, other USFS and SWCA staff (wildlife biologists, hydrologists, recreation specialists, transportation specialist, etc.) and remediation and mining experts (potentially RCC) to generate initial ideas to explore that achieve USFS design goals (visual, vegetation, wildlife, habitat, hydrology, recreation setting, transportation). Potential areas to address: best locations for waste rock and tailings piles; shaping of waste rock and tailings piles; treatment of side slopes, etc. ACTION ITEMS: Brainstorm current resource values and landscape patterns; identify opportunities and constraints for resources; and demonstrate some concepts with simple clay model.	Lead and facilitate workshop	Participate in workshop		Alternatives	Alternatives Analysis Funding	N	Possibly utilize a facilitator to direct the workshop and outcomes. Invitees to the workshop would include specialists with interest in constructively critiquing the proposed action and identifying potential design responses. Possibly develop a rough, quick cardboard model of the Existing Topography and/or Proposed Action (consider paying a student). Consider reshaping pile only within Barrel Canyon drainage, but also look for alternatives that would lessen resource impacts. Consider also future roads and trails through the area (including on waste rock piles) after mine is closed.	
3f	Explore and refine concepts identified in workshop for alternative placement and shaping of waste rock and tailings piles that better protects and mimics natural landforms and valued landscape character. Explore radically different shaping to avoid the monolithic form, flat top, and even side slopes. Consider options that may benefit wildlife habitat and other resources and those that might mitigate impacts of the pit (such as removing the most visible western edge). If 3-D computer modeling is not sufficient to complete this step, utilize other methods such as a topographic model.	Lead process and complete work. Provide ideas to IDT during discussion of alternatives.	Review and advise. Participate in 3-D computer modeling sessions.		Alternatives	Alternatives Analysis Funding	N		
3g	Select tentative key viewpoints for simulations. Document these locations with photography and GPS. Prepare "before" images.	Provide draft and final. Site visits as needed.	Review and comment		Alternatives	Simulations MPO Change Order Request	N	Consider results of task 3a.	
3h	Create one or more 3-D computer simulations of potential landscape forms and refined landscape ideas for the proposed mine including waste rock and tailing pile forms.	Provide 3D model and simulations	Review simulation		Alternatives	Simulations MPO Change Order Request	N		
3i	Show results of step 3h to workshop group and get additional feedback.	Host a meeting	Attend meeting		Alternatives	Simulations MPO Change Order Request	N	May need to alter simulation and/or create additional simulations following this step.	
3j	Prepare Photo Real or artist rendered simulation drawings or video simulation driving down scenic byway and/or other key travelways.	Provide 3D Simulations	Review simulation		Alternatives	Simulations MPO Change Order Request	N	RCC may want to consider having a top notch visualization done by a high end company	

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3f	Explore and refine concepts identified in workshop for alternative placement and shaping of waste rock and tailings piles that better protect and mimics natural landforms and valued landscape character. Explore radically different shaping to avoid the monolithic form, flat top, and even side slopes. Consider options that may benefit wildlife habitat and other resources and those that might mitigate impacts of the pit (such as removing the most visible western edge). If 3-D computer modeling is not sufficient to complete this step, utilize other methods such as a topographic model.	Lead process and complete work. Provide ideas to IDT during discussion of alternatives.	Review and advise. Participate in 3-D computer modeling sessions.		Alternatives	Alternatives Analysis Funding	N		
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"Marcie Bidwell"  
<mbidwell@swca.com>  
08/10/2010 10:40 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "David Harris"  
<dharris@swca.com>  
cc  
bcc

Subject RE: Rosemont Plant and BLM Color Chart

Hello Debby,

Sorry for the responses at all kinds of crazy hours. Working too much lately.

The plant would likely not be seen in the MPO even at YR 10 from KOP 1 & 2; I don't remember seeing KOP 7 (the only other potential); as per direction from you in realization that we will not have YR 10 data, SWCA has not worked on the YR 10 simulations since July 16. However, the facilities should be out of site probably by around YR 7 (which is supposedly when the buttress will be completely filled in, per the MPO).

Thank you for confirming that the MPO color should follow Rosemonts selected color.

Cheers,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, August 10, 2010 8:28 AM  
**To:** David Harris; Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Plant and BLM Color Chart

David: Thank you for sending the BLM Standard Environmental Colors chart! I had looked at this chart on my computer screen, and also printed it on 2 color laserprinters and 2 plotters. Amazingly, none of these was close to the colors on the actual chart. I agree with you that Carlsbad Canyon would be a good choice for the Rosemont plant. Although I might normally lean toward something darker, it's probably a good balance between blending with landscape colors and not being too dark for buildings with no cooling systems.

Marcie: We're still awaiting photos of the lighter 2 colors from VP buildings, and I'm hoping they'll also send a sample of Patrician/Cool bronze. However, if you can't wait for these answers, I recommend that you proceed with simulations using Carlsbad Canyon for the alternatives (Phased, Barrel Only, and Scholefield). Although Clarissa referred us to VP buildings, Kathy Arnold continues to tell me that we can't specify a specific vendor color. She wants us to specify a ballpark color (or color range) so that multiple vendors can bid on the buildings/siding. I agree with you that the MPO should probably be light stone so it can be compared with mitigation. The plant will be seen in the 10-year MPO simulations, right?

~~~~~  
Debby Kriegel  
Coronado National Forest

(520) 388-8427

No virus found in this incoming message.

Checked by AVG - [www.avg.com](http://www.avg.com)

Version: 8.5.441 / Virus Database: 271.1.1/3059 - Release Date: 08/08/10 17:57:00



"Dale Ortman PE"  
<daleortmanpe@live.com>  
05/04/2010 06:59 AM

To "Horst Schor" <hjschor@jps.net>  
cc ""Beverley A Everson"" <beverson@fs.fed.us>, ""Melinda D  
Roth"" <mroth@fs.fed.us>, ""Debby Kriegel""  
<dkriegel@fs.fed.us>, ""Salek Shafiqullah - USFS ""  
bcc

Subject Rosemont Landform Report - Review Comments

Horst,

Attached are the review comments for the draft landform report and response to Rosemont constraints. Please let me know the timeframe for revising the report in response to the comments.

If you have any questions please contact me.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623



20100504\_ortman\_schor\_draft-landform-rpt-review-comments\_memo.pdf

## Task 5.2.Issue 2—Visual Resources

### Task (why are these "sub" tasks?) A. Affected Environment Update for 6 Alternatives and Connected Actions

- Update affected environment to incorporate alternatives, for specialist report and EIS. Collect KOP in Tucson area with GPS and photography.
- Update basic existing conditions maps to show key observation points (KOPs), sensitive viewer areas, bounds of analysis, concern levels, and scenic objective classes.

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### Subtask B. Prepare Alternatives Data: Convert CAD and Construct 3D GIS Surface

- Process CAD data and model data for GIS digital elevation modeling. Generate 3-D digital surfaces for the MPO and proposed alternatives at each construction phase selected for simulations.
- Create one set of 3-D working maps and diagrams for USFS and RCC to review potential scene from each KOP to be selected.
- Budget Assumptions: 12 data sets (what is a "data set"?) to process each alternative at 20-yr Phase and one additional time phase mid-construction.

### Subtask C. Prepare KOPs, Existing Conditions, Panoramas, and Visibility Maps

- Review all alternatives and KOPs established by the USFS and KOPs to propose to USFS for analysis, simulations, and level of detail for connected actions to define areas where impacts from the project is expected to be highly visible, distantly visible, and not visible (i.e. blocked or out of view)
- Prepare "existing conditions" panoramas for potential KOP simulations and review for use as simulations. For KOPs where project would be visible, select a phase to represent for each KOP in addition to Reclamation (i.e. construction at 5 years, etc.).
- Meet with USFS and RCC to review data, KOP selection and "photo realistic" process (1-2 meetings depending on plan) (what "plan"?) includes meeting preparations, meetings, and meeting summaries. Review draft simulations with specialists from USFS, SWCA, and RCC to direct specific aspects of renderings (soils, reveg, etc.)
- Budget Assumptions: 8 KOPs 20-yr Phase and additional Phase for 6 KOPs

### Subtask D. Draft Specialist Report Analysis Methodology and Evaluation Criteria

- Draft analysis methods and evaluation criteria that will be used to define and evaluate project effects for the project resources included in the study for all alternatives and KOPs.

#### Subtask E. Draft Visibility Diagrams and Simulations; Review with USFS/RCC

- Create computer simulations of proposed alternatives (6 total action alternatives) for selected KOPs for highly visible, moderately visible, and distantly visible locations. Highly visible and moderately visible KOPs simulations will show 2 phases of the proposed alternatives for each KOP (e.g. TBD construction phase and 20-yr final reclamation). Each simulation will show waste rock and tailing pile forms, pit, roads, stormwater, vegetation, and infrastructure.
- For KOPs where the MPO and proposed alternatives would not be visible, prepare a section diagram or labeled panorama showing key landscape features and visual screen.
- Prepare photorealistic simulation images for KOPs.
- Review draft simulations with resources specialist from RCC, USFS, and SWCA to direct specific aspects of renderings; reclamation, soils, vegetation, etc.
- Complete a Draft review with USFS and RCC staff at meeting in Tucson.

#### Subtask F. Prepare Environmental Consequences Analysis

- Prepare an environmental consequences analysis for Specialist Report. Report will include analysis of direct, indirect, and cumulative effects, and compare alternatives. Utilize direction from FSM/FSH and USFS Project Level Scenery Analysis. should analyze differences in effects from changes in the tailing pile design specifics or location and potential for remediation and mitigation to affect long-term visual quality. (what does the highlighted text mean?)
- Deliverables: Completed Visual Resources Specialist Report for all alternatives including draft simulations, visibility diagrams, and maps. As needed, provide text for EIS.

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#### Subtask G. Finalize Diagrams and Simulations; Review with USFS/RCC

- Complete changes to simulations.
- Submit final formatted figures (e.g. panoramas, diagrams, simulations) to USFS and RCC for final approval.
- Budget Assumptions: Diagrams and Simulations will focus on land forms and will include 1 final review with USFS and RCC.

#### Subtask H. Final Specialist Report.

- Finalize Specialist Report and review with USFS.

#### Assumptions:

- Costs are based upon deliverables for each proposal according to the number of KOPs brought forward for simulations and figure diagrams. All alternatives will describe up to 24 KOPs for the analysis process. Revised USFS and USFS original budgets include up to 8 panoramas {??}, non-visible KOPs diagrams for up to 6

KOPs, and simulations of highly visible and moderately visible KOPs for 8 KOPs for each of 6 proposed alternatives (up to 48 simulations) at 20-yr final reclamation and up to 6 KOPs for a construction phase per alternative (36 simulations). However, not all KOPs will require simulations for all alternatives (i.e. Sycamore canyon will not be visible from many of the KOPs along SR 83). KOPs and level of detail for simulations will be formalized at the initial simulation meeting; however costs are assumed based upon the list of KOPs provided by the USFS Simulation Strategy.

- RCC to provide all data and elevations required for simulations, including a 3D model of any facilities, structures, or transmission infrastructure. USFS, RCC and SWCA will collectively contribute example imagery for depicting coloration, texture, formations, structures, and other details for portrayal in the simulations prior to simulations initiating. Surface data or changes to surface data that is provided/requested after 3D modeling is initiated will be incorporated on a time and materials basis. Direction regarding these details that is received after simulations have been initiated that varies dramatically may result in a change order. Simulations that require detailed development of the mine plant will be completed on a time and materials basis. Field work for 10 of the 14 KOPs has already been collected under the Visual Technical Report scope. SWCA assumes that Mt. Wrightson has been photographed by Rosemont's subcontractors are the photos good enough? and SWCA will be able to use this panorama for simulations. It is assumed that field documentation will be required for Box Canyon and Tucson KOPs at a minimum. Changes to the KOPs or to the construction phase selected for simulation after this meeting may require additional field work and may result in a change order. Additional KOPs, simulations, phases, or alternatives may be requested for an additional fee.
- Simulations will be classified as "highly visible" or "moderately visible". Highly visible simulations will show detailed variations in land form, vegetation, color, and texture for tailings and waste rock placement. Moderately visible simulations will show general variations in land form, vegetation, color and texture due to the level of detail being reduced by the distance of the viewer from the project area.
- Should KOPs require extensive define visualization of mining facilities, conveyors, equipment, transmission lines, etc, the work for these layers will be performed on a time and material basis, due to the unpredictable level of detail and effort required for these structures.
- RCC and USFS we likely need a 3<sup>rd</sup> party consultant and/or study are to agree upon the level of reclamation and vegetation success to be rendered prior to initiation of photoreal simulations. Changes in the direction given to SWCA to represent these aspects will require a change order, should they require additional time and effort to address.
- RCC will provide example photographs of existing reclamation, mining structures, vegetation mixes, soil types and colors, and other data to SWCA prior to the initiation of the simulations. Necessary imagery will be discussed at simulation initiation meeting in Task 1?

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➤ This estimate assumes that SWCA will create 3D surfaces for MPO and proposed alternatives from RCC CAD drawings for up to 2 phases of construction. Should RCC provide GIS surfaces, these costs may be reduced accordingly (Task 2?). Changes in data, proposed action, and level of detail requested for simulations, phases of construction, and resolution of imagery after project initiation will require adjustments based upon time and materials. SWCA will submit surfaces to RCC and USFS for review prior to creation of simulations.

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➤ Cost estimate includes two in-person meetings as two trips to Tucson for Marcie Bidwell to work with USFS and RCC on simulations, per direction of USFS staff. Additional trips may be required by USFS or RCC, and these will be arranged through an additional change order. Each task includes meeting hours for senior staff, visual specialist, editors as necessary and senior GIS under each task; additional meetings may be arranged on a time and materials basis.

➤ This scope of work includes one round of draft review and one round of final review (of specialist report or simulations? Probably need 2 draft reviews of both. Subtask B mentions the first review for simulations, which is likely the first draft review, and the first review of affected environment can't be considered the last draft review.). Additional changes, reviews, or updates will require an additional change order. Ideally, review of final images will require minimal edits agreeable to both USFS and RCC for accurate portrayal of the MPO. Explorations of mitigation options (such as painting facilities alternative colors or reducing pit contrast through other than agreed-upon mitigation treatments) would be covered under an additional scope. USFS and RCC should attempt to synchronize their comments prior to submittal to SWCA; should differences of opinion occur, SWCA will default to USFS guidance as the official SWCA client.

Deleted: or

Deleted: various

Deleted: surface application

Deleted: are considered alternatives and

Deleted: be required to



"Trent Reeder"  
<treeder@swca.com>  
06/30/2010 09:00 AM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>, "Jonathan Rigg"  
cc  
bcc

Subject RE: Box Canyon Road assessment

History:

✉ This message has been replied to.

Here are two viewshed images from the Box Canyon road south of the project area . Viewable areas are in red. The first one is a viewshed analysis from TT's current KOP8 location. Second image depicts a linear viewshed from a segment of the Box Canyon road (blue line). Results from the linear viewshed analysis can be a little misleading because of the overlap of viewsheds from the line. I shorten the analysis segment of Box Canyon road to an area where I believe would reveal more of the MPO. The current location of KOP 8 is in a low drainage with terrain upslope on both sides. As you move towards the west along the road, it opens up into more of a "bowl". Once at the intersection of Rd 231 and Box Canyon, the MPO Waste Rock southern slope would be quite visible. The last attachment depicts the shorter Box Canyon segment in blue and the viewshed results of this segment.

The green dot represents an approximate location where TT took the KOP 8 photos. I was able to locate this photo point by comparing both KOP 8 and KOP 3 panoramas, for which segments of each panorama overlap. In addition, I compared visible vegetation patterns/densities using aerial images along with matching terrain characteristics between the panoramas and 3D generated surfaces.

Marcie mentioned that she took some photos along the Box Canyon road for which I will do some research to see if I can match those photos to some earlier GPS point data. If I can find a match, perhaps this will replace the current KOP 8 location. I will keep you updated on my progress.

Trent

<<TT KOP 8 Viewshed.pdf>> <<Box Canyon Road Viewshed.pdf>> <<Box Canyon Road Viewshed\_b.pdf>> \_\_\_\_\_

**From:** Marcie Bidwell

**Sent:** Friday, June 25, 2010 12:40 PM

**To:** Trent Reeder; Debby Kriegel; Debby Kriegel; Tom Furgason; Jonathan Rigg

**Subject:** Box Canyon Road assessment

Trent,

I talked with Debby regarding the Box Canyon Road KOP and its alignment issues (that the Tt GPS point and Tt photos do not align for Box Canyon).

We thought that if you did a linear viewshed analysis, we could determine if there is a point on the road that will have open views, or not; then we can assess if its important to have a field person retake those photographs.

Does that seem reasonable? Use a footprint that would be closer to the southern boundary (MPO, Upper Barrel) if you can.

Thanks!  
Marcie

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

Durango, Colorado 81301

Office: 970.385.8566

Fax: 970.385.1938

[www.swca.com](http://www.swca.com)[attachment "TT KOP 8 Viewshed.pdf" deleted by Debby Kriegel/R3/USDAFS] [attachment "Box Canyon Road Viewshed.pdf" deleted by Debby Kriegel/R3/USDAFS] [attachment "Box Canyon Road Viewshed b.pdf" deleted by Debby Kriegel/R3/USDAFS]



"Trent Reeder"  
<treeder@swca.com>  
04/08/2010 09:19 AM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Viewshed Example

We did receive their GIS data. It will take a few hours to download then I will overlay their results and possibly work through their process.

Trent

**From:** Marcie Bidwell  
**Sent:** Wednesday, April 07, 2010 3:15 PM  
**To:** Trent Reeder; Debby Kriegel  
**Subject:** RE: Viewshed Example

Trent,

Did we receive the data as shapefiles from Tt? If we did, would it be possible to overlay your analysis and theirs to see how they compare?

Debby,

To answer your question, different software and different data will both effect the results. Most importantly, Trent mentioned that if they used the larger pixel size data, that could make the real difference. One 30-meter pixel is 100 feet, so an easy data difference can eliminate 2 benches.

For your letter, I would recommend that you ask them to provide a paragraph describing their methods and data sources, so that (1) its recorded in the record and (2) we can better think through the differences. An example is included below.

The differences may be just developed from pixel sizes; it may also include parameters set (such as height of pixel, etc). As the we did not require a particular size and process, this may be hard to set after the fact. Seeing their meta data/process would help to define the differences.

Does that help?  
Marcie

A viewshed analysis utilizes GIS (program) to select the cells from a digital elevation model (DEM) as visible or non-visible from one or more observation points or lines. The viewshed for each KOP observation point was derived from the United States Geologic Society's xxx Quadrangle of 10 × 10 meter cell resolution. Viewshed analysis parameters were defined for each KOP to account for viewer height and to focus the analysis field of view. These parameters produce a more accurate viewshed result, and also reduce processing time and file size. The parameters used for this analysis include xxxxx

---

**From:** Trent Reeder  
**Sent:** Wednesday, April 07, 2010 1:58 PM  
**To:** Debby Kriegel  
**Cc:** Marcie Bidwell  
**Subject:** Viewshed Example  
Hi Debby,

Here are two images from the same KOP 2 location showing the viewshed analysis results for Scholefield/McCleary. The first image is a plan view of our viewshed results. The green color represents viewable terrain from KOP 2. The second image shows a 3D version from KOP 2 with the viewshed results (in green) overlaying the 3D terrain.

Reviewing TT's KOP 2 Alt 5 viewshed analysis, their viewshed analysis is not too different than the attached images we created. I believe TT is using different GIS software to generate their viewsheds. Because we are using two different GIS software to generate these viewsheds, both software algorithms may differ in how they compute viewsheds.

Another thing to point out in their Scholefield/McCleary viewshed PDF, we noticed that the Heap Pile southeast of the pit was not turned on, but it looks like they did take that Heap Pile into account in their viewshed analysis and this does obscure some of the pit.

Please let me know if you have additional questions. Thanks!

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
[treeder@swca.com](mailto:treeder@swca.com)  
130 Rock Point Dr. Suite A  
Durango, Colorado 81303  
Work (970) 385-8566  
Fax (970) 385-1938  
[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
08/11/2010 06:45 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "David Harris"  
<dharris@swca.com>

cc

bcc

Subject RE: External Visual Input -Fw: Scoping Comment for Draft  
Environmental Impact Statement (EIS) on the Proposed  
Rosemont Copper Project

Thank you Debby

David, you and I had discussed that most of the alternatives will probably require a plan amendment for visual resources. We need to make sure we include that in our EC assessment.

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tue 8/10/2010 12:27 PM  
**To:** Marcie Bidwell; David Harris  
**Cc:** Debby Kriegel  
**Subject:** Fw: External Visual Input -Fw: Scoping Comment for Draft Environmental Impact Statement (EIS) on the Proposed Rosemont Copper Project

Marcie and David:

Below is a link to formal input on visual impacts from 5 very important public groups. Please review the letter and maps as you work on environmental consequences and incorporate appropriate parts of their concerns and conclusions into your analysis. I suspect most of their topics are covered, so this might simply provide a good cross-check.

Other thoughts:

1. If their visibility map (map #1) differs substantially from yours, I'd like to understand why (e.g., is their methodology different from yours?).
2. On map #2, they differentiated visibility of the various project features (pit, piles, etc.). How difficult would it be for you to run the visibility this way? I don't see this as a critical thing to do, but if you have few points on the pit and a few on the pile and it's relatively quick to let the computer run these groups separately and together, it has some value (different impacts from different areas).
3. I like the 1-mile concentric circles on their maps, and it helps provide a quick overview of distances (especially for background). Can you add something similar to the ones you're doing?
4. Terry Chase (our new NEPA person) is working on the cumulative effects list. The possible future mines are currently on the draft list, but it's unclear whether there is sufficient information about these mines to conclude that they're "reasonably foreseeable future actions". Stay tuned for more direction on that. However, I'd like to see these mines mentioned in your cumulative effects analysis, even if we are not technically deemed reasonably foreseeable.

Per my phone message this morning, please provide revised target dates for submitting the draft environmental consequences and remaining simulations. I will take your input to FS leadership so we're being up-front about the new timeline, and I want to give our regional LA a heads-up to be ready for reviews.



-----

Lisa Froelich, Coordinator  
Save the Scenic Santa Ritas  
8987 E. Tanque Verde #309-157  
Tucson, AZ 85749  
520-445-6615  
[lisa@scenicsantaritas.org](mailto:lisa@scenicsantaritas.org)

**From:** Lisa Froelich <[lisa@scenicsantaritas.org](mailto:lisa@scenicsantaritas.org)>

**Date:** Fri, 23 Jul 2010 16:13:06 -0700

**To:** <[rlaford@fs.fed.us](mailto:rlaford@fs.fed.us)>

**Conversation:** Scoping Comment for Draft Environmental Impact Statement (EIS) on the Proposed Rosemont Copper Project

**Subject:** Scoping Comment for Draft Environmental Impact Statement (EIS) on the Proposed Rosemont Copper Project

Dear Ms. Laford,

Save the Scenic Santa Ritas, the Mountain Empire Action Alliance, the Center for Biological Diversity, the Arizona Mining Reform Coalition, and Sky Island Alliance would like to submit a completed visibility analysis of the proposed Rosemont Copper project. Due to the large size of the scoping comment, we have uploaded the file to our server and ask that you download it by following this link:

<http://www.scenicsantaritas.org/VisibilityAnalysis/USFSVisibilityAnalysisCommentLetterFINAL.pdf>

Please let me know if you have any trouble downloading this document.

The analysis consists of the following four elements:

- (1) A summary of the methodology and data used for the analysis;
- (2) Four visibility maps: 1. General Visibility Analysis of Proposed Rosemont Copper Project; 2. Detailed Visibility Analysis of Proposed Rosemont Copper Project; 3. Visibility Analyses of Additional Mines Planned by Augusta Resources; 4. Visibility Analyses of Augusta Resources Planned Mines
- (3) Panoramic Photographs showing visibility of the proposed and planned mines on both the east and west sides of the Santa Rita Mountains; and
- (4) A summary of the qualifications of the personnel involved in the preparation of the materials.

Please do not hesitate to contact Save the Scenic Santa Ritas or any of the undersigned organizations with questions or comments.

Sincerely,

Lisa Froelich

-----

Lisa Froelich, Coordinator

Save the Scenic Santa Ritas  
8987 E. Tanque Verde #309-157  
Tucson, AZ 85749  
520-445-6615  
[lisa@scenicsantaritas.org](mailto:lisa@scenicsantaritas.org)

No virus found in this incoming message.  
Checked by AVG - [www.avg.com](http://www.avg.com)  
Version: 8.5.441 / Virus Database: 271.1.1/3059 - Release Date: 08/08/10 17:57:00



"Marcie Bidwell"  
<mbidwell@swca.com>  
06/25/2010 11:40 AM

To "Trent Reeder" <treeder@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>, "Debby Kriegel" <dkriegel@fs.fed.us>,  
"Tom Furgason" <tfurgason@swca.com>, "Jonathan Rigg"  
cc  
bcc  
Subject Box Canyon Road assessment

Trent,

I talked with Debby regarding the Box Canyon Road KOP and its alignment issues (that the Tt GPS point and Tt photos do not align for Box Canyon).

We thought that if you did a linear viewshed analysis, we could determine if there is a point on the road that will have open views, or not; then we can assess if its important to have a field person retake those photographs.

Does that seem reasonable? Use a footprint that would be closer to the southern boundary (MPO, Upper Barrel) if you can.

Thanks!  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
02/12/2010 10:40 AM

To tfurgason@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc

Subject Fw: Rosemont information request

History:  This message has been forwarded.

Tom: Would you please check with Dale on this? I have not received a response from anyone. Thanks.  
Debby

----- Forwarded by Debby Kriegel/R3/USDAFS on 02/12/2010 10:38 AM -----



Melinda D Roth/R3/USDAFS  
02/04/2010 03:45 PM

To tfurgason@swca, jrigg@swca.com, daleortmanpe@live.com  
cc Beverley A Everson/R3/USDAFS@FSNOTES,  
bidwell@swca.com, Debby  
Kriegel/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
Subject Re: Rosemont information request 

Tom/Dale/Jonathan: See msg. below. Do we have this level of detail already somewhere?

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
02/04/2010 09:25 AM

To Melinda D Roth/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES, bidwell@swca.com  
Subject Rosemont information request

Bev and Mindee,

I have read the MPO and Reclamation and Closure Plan and attend regular Rosemont meetings, but I continue to be surprised by learning about additional mine-related features that would effect visual quality and recreation. This is due to my lack of experience on large mines, and I simply don't understand the scale and appearance of many of these features.

We have good information on the pit, plant, and access road, and will be getting more information on the power line and grading for the waste rock and tailings piles. It's the rest of the stuff that I find myself unclear about.

I would like to formally request information from Rosemont. This information will be needed for both visual quality and recreation analyses, and is likely of value to other IDT members. I will need complete information for each feature (written descriptions, sizes, photos of equivalent items from other mines, details, etc.), as well as maps of where these features will be located.

1. All above-ground constructed features (other than the pit, plant, access road, and power line) that will be needed for mine operations, including, but not limited to: buildings, drainage structures (headwalls, hardened drainageways, etc.), well enclosures/housings, conveyors, slabs, roads, fences, and above-ground water lines.
2. All facilities and other improvements that must remain after mine closure, including, but not limited to: buildings, constructed drainage structures (headwalls, hardened drainageways, etc.), well enclosures/housings, slabs, roads, fences, and above-ground utility lines.
3. Areas (other than the pit and waste rock and tailings piles) that will require major grading during mine operations or will not be returned to natural topography after mine closure. This would include embankments (sediment ponds, containment areas, compliance dams, diversion basins, etc.), grading for the plant site and mine access road, perimeter roads, and other similar areas.

Please forward this request to Rosemont.

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
<mbidwell@swca.com>  
03/10/2009 09:25 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Simulations

Debbie,

I will call you to discuss this when I return from a meeting (near noon).

THanks,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, March 06, 2009 2:39 PM  
**To:** Marcie Bidwell  
**Subject:** RE: Rosemont Simulations

I would like you to follow up with this. Thanks.

"Marcie Bidwell" <mbidwell@swca.com>

03/06/2009 10:03 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject RE: Rosemont Simulations

Hello Debbie,

Glad to hear that you were able to catch Bev. I can make the call if I am the best person to do it, but I wanted to suggest that if the call came from the USFS (i.e. you) it may have better results. Because that would then place the USFS as the authority to say, this is what I want/not what I want.

I think it would be a good thing for you to be the person asking what they are delivering, and then stating what deliverables you require. SWCA's role is to support the USFS, but not to supercede it.

(Grand Canyon sounds so nice right now...) We will all have to send Bev good vibrations to carry her through Lava and Crystal Rapids!

What do you think about that approach?  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Thursday, March 05, 2009 3:22 PM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Simulations

Marcie:

Bev called me on her way out of town for 2 weeks (she's rafting the Grand Canyon). I told her that you wanted to get information about the simulations Rosemont is doing (or plans to do). She told me that you can contact Rosemont directly, but first you need to send an email to Kent, the FS Rosemont project manager while Bev's away (kellett@fs.fed.us) and ask him if it's ok for you to contact Rosemont. Kent should be able to give you the ok. And please cc Bev (beverson@fs.fed.us) and me with your email correspondence with Kent.

Thanks.

Debby

Debby Kriegel/R3/USDAFS  
09/04/2009 11:54 AM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject RE: Proposed Rosemont Mine - Field Visit in September 

Marcie:

The IDT meeting went well. Two of the alternatives will change. The Sycamore Canyon alternative will be altered to avoid placing any waste rock in McCleary Canyon; tailings will go in Sycamore and waste rock in Barrel. The McCleary/Scholefield alternative will be altered to remove the waste rock piled in upper McCleary on the mineral claim. Rosemont needs to provide some information for the mineral claim, then Dale and/or Tetra Tech will draw something for each alternative, then we'll get to see the results.

Tom Ferguson mentioned that the Mountain Empire Alliance weekend might influence bounds of analysis for some resources. Can you confirm whether our bounds of analysis for visual resources includes the whole valley?

I had a long conversation with Jimmy Pepper yesterday. He had some specific requests:

1. He thinks we ought to do a visibility map similar to what he showed us on the first morning -- plotting a few points on the top of the waste rock and tailings piles and/or top of the pit, and viewing out to show the extent of what areas are visible. Although this is the reverse of what VRMS and SMS do (i.e., both systems view FROM sensitive travelway TO the mine), I'd like to ask if you and Trent could create this map fairly simply. It could be a good graphic for the proposed action analysis. Would this take a lot of time?
2. He asked for copies of the draft KOP map so far and the concern level map. I'll send these to him next week.
3. He would like to say involved as we proceed with visual work. Let's keep him in mind as we move forward. He might be a good person to show some of our simulations to in order to decide how detailed they should be.

You have one more trip to Tucson currently funded, right? If the trip below gets postponed (which is relatively likely), when were you thinking of coming down next? What field work do you need to do for currently funded tasks (affected environment, proposed action, etc.)?

Thanks. Have a good weekend!

Debby

"Marcie Bidwell" <mbidwell@swca.com>



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/02/2009 01:09 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject RE: Proposed Rosemont Mine - Field Visit in September

Debby,

How did the meeting go today? I am in the office if you want to discuss it.

As to the trip below, I guess I should mention that until the Simulations Budget is approved (which I understand that RCC has stated that they will not approve more work until the Alternatives are finalized), the "next trip" for me is still hypothetical. Additionally, I need to be careful that we keep the meetings and field time to what would fit in that budget. Sorry to be so mindful of the time commitment, but its a sign of the times.

Let me know if you have any feedback regarding alternatives.  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, September 02, 2009 1:43 PM  
**To:** rich@soil-tech.com; Francisco Valenzuela; Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Proposed Rosemont Mine - Field Visit in September

I'd like to attempt to schedule some field time on this project later this month, ideally with all 4 of us. A couple of tasks to focus on are:

1. Rich Beemis, with Soil-Tech, mentioned that he may be in the Tucson area in late September. We were hoping to look at reveg test plots and/or the rock that will be on the back of the pit and/or on the surface of waste rock and tailing piles, and experiment with Permeon.
2. Francisco, the new FS R3 director of recreation (who is also a landscape architect), has indicated that he may be willing to visit the site and provide some insight and advice for visual resources and recreation settings as alternatives are developed and simulations begin.

Marcie and I just looked at our schedules, and the best dates for both of us are Sept. 24-30. After that Marcie is unavailable until after October 17.

Francisco and Rich: Could you make a trip to Tucson during this window? Which dates would be best for you?

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Sarah L Davis/R3/USDAFS  
03/09/2009 10:38 AM

To "Stephen Leslie" <sleslie@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES  
bcc  
Subject Re: Rosemont Recreation Headings and Subheadings 

Steve, Debby will be your Forest contact for Recreation.

Debby, Steve will be away from the office this week and requests you call him on his cell ----  
702-277-1806. I spoke with him this morning.

Sarah L. Davis, ASLA  
Plan Revision Team  
Coronado National Forest  
TEL 520-388-8458  
FAX 520-388-8332  
"Stephen Leslie" <sleslie@swca.com>



"Stephen Leslie"  
<sleslie@swca.com>  
03/09/2009 09:02 AM

To <slidavis@fs.fed.us>  
cc  
Subject Rosemont Recreation Headings and Subheadings

Sarah,

Here is a draft outline for the recreation affected environment/current environmental conditions section of the Rosemont EIS. Please let me know if you would like to add or subtract any headings/subheadings.

Thanks very much.

Steve Leslie  
Environmental Planner  
SWCA Environmental Consultants  
2820 West Charleston Boulevard, Suite 15  
Las Vegas, Nevada 89102  
sleslie@swca.com  
Office – 702-248-3880



Cell – 702-277-1806 Rosemont Recreation Headings and Subheadings.doc

## **3.0 AFFECTED ENVIRONMENT**

---

### **3.1 RECREATION AND TOURISM**

#### **3.1.1 GENERAL SETTING**

##### **3.1.1.1 SUPPLY OF RECREATION OPPORTUNITIES**

###### **3.1.1.1.1 RECREATION OPPORTUNITY SPECTRUM**

###### **3.1.1.1.2 RECREATION PLACES**

##### **3.1.1.2 EXISTING USE LEVELS AND TRENDS**

###### **3.1.1.2.1 FOREST USE**

###### **3.1.1.2.2 RESIDENT RECREATION**

###### **3.1.1.2.3 TOURISM**

###### **3.1.1.2.4 COMMERCIAL OUTFITTER AND GUIDE USE**

**Comment [s1]:** Not sure if this is appropriate for the Rosemont Project Area.



Melinda D Roth/R3/USDAFS  
11/19/2009 04:02 PM

To Debby Kriegel/R3/USDAFS@FSNOTES,  
tfurgason@swca.com

cc

bcc

Subject Re: Rosemont - Compensatory Lands 

Tom - See Debby's request for GIS assistance...

Debby - as soon as I have some idea of possible parcels, I will start the dialog with Rosemont. If today's meeting identified any parcel selection criteria or listed what resources need to be compensated for, that too would be helpful. Thx.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
11/19/2009 03:46 PM

To Melinda D Roth/R3/USDAFS@FSNOTES

cc Debby Kriegel/R3/USDAFS@FSNOTES

Subject Rosemont - Compensatory Lands

Mindee,

This afternoon we had our first meeting with cooperating agencies to brainstorm ideas for possible compensatory lands for the Rosemont mine. Arizona Game & Fish has about a dozen ideas and wants to talk to The Nature Conservancy about more, Pima County has a bunch of thoughts and a map of other high priority lands, and the Tohono O'odham Nation is going to meet with the Archaeological Conservancy to come up with a list.

The group recommends that the first step in the process be to create a GIS map and database to compile all the ideas and information about each piece of land. We plan to meet again January 12, and ideally we'd want to have a first draft of this product.

I would like to request some of SWCA's GIS person's time to do this work. I can collect ideas from the cooperators and provide guidance to SWCA.

Please let me know if this will be possible. Thanks!

Debby



"Tom Furgason"  
<tfurgason@swca.com>  
11/18/2009 12:08 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Pima County map guide

<http://www.dot.co.pima.az.us/gis/maps/mapguide/mgmap.cfm?path=/gis/maps/mapguide/dotmap65.mwf>

## **Tom Furgason**

Program Director  
SWCA Environmental Consultants  
343 West Franklin Street  
Tucson, AZ 85701  
(520) 325-9194 ext. 110  
(520) 820-5178 mobile  
(520) 325-2033 fax



**Beverley A  
Everson/R3/USDAFS**  
06/02/2009 06:12 PM

To karnold@rosemontcopper.com, Debby  
Kriegel/R3/USDAFS@FSNOTES  
cc  
bcc  
Subject Rosemont KOPs and Desired Condition

Kathy, please see Debby's message and enclosure below. Can you forward this information to Joy and to David? Thank you. Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 06/02/2009 06:09 PM -----

**Debby Kriegel/R3/USDAFS**

06/02/2009 01:21 PM

To Beverley A Everson/R3/USDAFS@FSNOTES  
cc  
Subject Rosemont KOPs and Desired Condition

Bev,

At our meeting on May 7th, David Krizek (Tetra Tech) and Joy Lyndes (Sage) asked for KOPs (Key Observation Points) from SWCA and a desired condition statement from the USFS.

Here is a draft desired condition statement:



DesiredCondition.doc

The message below contains a zip file with the KOPs identified so far.

Please forward to David and Joy. David's email is david.krizek@tetrattech.com. Joy's email is jlyndes@sagelandscape.com.

Thanks!

Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
www.fs.fed.us/r3/coronado/  
dkriegel@fs.fed.us

----- Forwarded by Debby Kriegel/R3/USDAFS on 06/02/2009 01:13 PM -----



"Trent Reeder"  
<treeder@swca.com>  
06/02/2009 08:18 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Marcie Bidwell" <mbidwell@swca.com>  
Subject RE: Rosemont KOP shapefile

**From:** Trent Reeder  
**Sent:** Thursday, May 28, 2009 10:29 AM  
**To:** 'Debby Kriegel'  
**Cc:** Marcie Bidwell  
**Subject:** Rosemont KOP shapefile

Hi Debby,

Here's a shapefile consisting of all project KOP locations. Please let me know if you need anything else.

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
[treeder@swca.com](mailto:treeder@swca.com)  
130 Rock Point Dr. Suite A  
Durango, Colorado 81303  
Work (970) 385-8566  
Fax (970) 385-1938  
[www.swca.com](http://www.swca.com)



Rosept\_KOPs.zip

Not printed  
(GIS shapefile)

**Desired Condition – Northern Santa Rita Mountains – Scenic Quality and Recreation**  
Debby Kriegel, May 8, 2009

The diverse landscapes of the northern Santa Rita Mountains offer a variety of settings for a broad range of recreational opportunities and a place for visitors to escape from busy urban life into quiet, natural, wild places. Visitors enjoy vast open space, canyon bottoms with mature trees, golden rolling grasslands dotted with oak and juniper, and rugged, rocky mountain ridgetops. Visitors rarely see utilitarian structures (such as power lines and buildings), and mines that are no longer operational have been completely naturalized by restoring topography and vegetation to blend with the surrounding landscape.

Lands along the Patagonia-Sonoita Scenic Road (AZ Hwy 83) and along Forest Service roads appear natural. Visitors find occasional developed recreation facilities (such as picnic tables, an OHV staging area, and trailhead signs), but these facilities are in character with the National Forest setting.

Dispersed recreation activities in the area include scenic driving, hiking, horseback riding, birdwatching, camping, hunting, and more. Visitors use off-highway vehicles responsibly and stay on designated roads. Dispersed campsites are small and clean, and resource damage is not a problem.

Landscapes away from roads, and lands along the Arizona Trail, provide opportunities for solitude and spending time in pristine wildlands with minimal evidence of human activity. The Arizona Trail is well-marked and well maintained. Access roads to trailheads are open and maintained, and trailheads provide adequate parking and turnaround space. Damage to resources at trailheads is minimal, and wildcat trails are rare.



"Lara Mitchell"  
<lmitchell@swca.com>  
07/26/2010 01:29 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont West Access Road, Water Line, and Power Line

Per the data we received from TT on Thurs, July 22<sup>nd</sup>, the water line (it's the same alignment for all alternatives) goes through Lopez Pass.

-Lara

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, July 19, 2010 1:41 PM  
**To:** Lara Mitchell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont West Access Road, Water Line, and Power Line

Lara,

On Friday, we took a hard drive to Tetra Tech and collected GIS data for the MPO and alternatives. When you're back in the office and have time to review this data, please look at the following files for the MPO and each alternative:

- West access road
- Power line
- Water line

Which are over Gunsight Pass? Which are over Lopez Pass?

Thanks!!

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Stephen Leslie"  
<sleslie@swca.com>  
06/15/2009 08:07 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Charles Coyle" <ccoyle@swca.com>, "Marcie Bidwell"  
<mbidwell@swca.com>, "Lara Mitchell"  
<lmitchell@swca.com>  
bcc

Subject Recreation and Wilderness Bounds of Analysis - Rosemont

History:

 This message has been replied to.

Debby,

Welcome back. Here is an initial draft of the bounds of analysis for recreation and wilderness. I'll be available to discuss further and refine this as necessary when you get a chance.

Thanks,  
Steve Leslie  
Environmental Planner  
SWCA Environmental Consultants  
2820 West Charleston Boulevard, Suite 15  
Las Vegas, Nevada 89102



702-248-3880 Rec and Wild Bnds of Analysis.doc

## **Rosemont Recreation and Wilderness Bounds of Analysis**

The bounds of analysis for the elements of the Recreation and Wilderness disciplines as presented in the Rosemont Project EIS Draft Chapter 3 Affected Environment Outline, May 19, 2009 will apply to both the group of twelve issues deemed “significant” by the CNF and any additional issues that may be described in Chapter 3 Affected Environment, regardless of a determination of “significance”. The bounds of analysis for recreation and wilderness encompass both the temporal and spatial extent necessary to describe the recreation and wilderness resources that may be impacted by the proposed project. The potential impacts to recreation and wilderness are related to disruption of access, diminished quality of recreational setting and values, increased noise, decreased opportunities for solitude, reduced public safety, conflicts with special use permittees, and increases in visitation to other sites as a result of visitor displacement.

Temporal bounds are described in terms of the four phases being applied to the Rosemont Project. These four phases consist of: Construction, Operations, Closure and Post Closure. The potential impacts described above would occur throughout and following the active mine life. As such, the temporal bounds of analysis for recreation and wilderness would include all four phases of the proposed action.

Spatial bounds are described by the geographic area to be used for analysis; this memo describes the spatial bounds in general geographic terms (need map). The potential impacts to recreation and wilderness would occur within the following geographic bounds consisting of the active project area, the forest unit encompassing the Santa Rita Mountains of the CNF, including the Mount Wrightson Wilderness and the Las Colinas section of the Arizona Trail, as well as the BLM managed Las Cienegas Conservation Area east of the forest unit.

Debby Kriegel/R3/USDAFS  
02/04/2010 09:25 AM

To Melinda D Roth/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES, bidwell@swca.com  
bcc

Subject Rosemont information request

Bev and Mindee,

I have read the MPO and Reclamation and Closure Plan and attend regular Rosemont meetings, but I continue to be surprised by learning about additional mine-related features that would effect visual quality and recreation. This is due to my lack of experience on large mines, and I simply don't understand the scale and appearance of many of these features.

We have good information on the pit, plant, and access road, and will be getting more information on the power line and grading for the waste rock and tailings piles. It's the rest of the stuff that I find myself unclear about.

I would like to formally request information from Rosemont. This information will be needed for both visual quality and recreation analyses, and is likely of value to other IDT members. I will need complete information for each feature (written descriptions, sizes, photos of equivalent items from other mines, details, etc.), as well as maps of where these features will be located.

1. All above-ground constructed features (other than the pit, plant, access road, and power line) that will be needed for mine operations, including, but not limited to: buildings, drainage structures (headwalls, hardened drainageways, etc.), well enclosures/housings, conveyors, slabs, roads, fences, and above-ground water lines.
2. All facilities and other improvements that must remain after mine closure, including, but not limited to: buildings, constructed drainage structures (headwalls, hardened drainageways, etc.), well enclosures/housings, slabs, roads, fences, and above-ground utility lines.
3. Areas (other than the pit and waste rock and tailings piles) that will require major grading during mine operations or will not be returned to natural topography after mine closure. This would include embankments (sediment ponds, containment areas, compliance dams, diversion basins, etc.), grading for the plant site and mine access road, perimeter roads, and other similar areas.

Please forward this request to Rosemont.

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
<mbidwell@swca.com>  
08/03/2010 03:10 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Trent Reeder" <treeder@swca.com>, "David Harris"  
<dharris@swca.com>  
bcc

Subject RE: VQO- Viewer Sensitivity Figure

History:  This message has been replied to.

You had requested that we show the other VQO values other than preservation, retention etc. All of these attributes are in one shapefile (this is not multiple files).

This is the other data that Trent has from Terri for VQOs.

Hope that helps,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, August 03, 2010 3:39 PM  
**To:** Marcie Bidwell; Trent Reeder  
**Cc:** David Harris  
**Subject:** RE: VQO- Viewer Sensitivity Figure

I'm confused. What is the purpose of this map? My comments will be very different depending on what you are trying to show.

"David Harris" <dharris@swca.com>

08/03/2010 12:32 PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Trent Reeder" <treeder@swca.com>  
Subject RE: VQO- Viewer Sensitivity Figure

Two things about the map that immediately come to mind.

- 1) The gradual color gradations between most distinct to least distinct make it difficult to distinguish on the map. It is possible to make these more obvious and contrasting so the viewer can easily see the differences? The idea of using color changes for fore, middle, and background is good, but the gradation maybe not so good. A greater color range might make for easier interpretation.
- 2) This is a lot of information to present. Do we need to show everything? How about showing what's critically important, like the Concern Levels 1 and 2 for Most Distinct and Distinct?

David Harris  
SWCA Environmental Consultants

801-322-4307 (Office)

801-230-8359 (Cell)

**From:** Marcie Bidwell

**Sent:** Tuesday, August 03, 2010 12:51 PM

**To:** Debby Kriegel; David Harris

**Cc:** Trent Reeder

**Subject:** VQO- Viewer Sensitivity Figure

Hello Debby and David,

Here is the VQO figure showing sensitivity- The data has all of the classes written out in one column, so its hard to work with. Trent did a great job isolating the values of our area to create this map. We used the terminology from the Coronado National Forest Scenery Inventory (2001) that you gave me, where Terry (USFS GIS) presents her methodology on creating these layers.

Side note, regarding your conversation/comment regarding "sensitive viewers" term. Following USFS manuals, we know that the USFS refers to it as constituent "sensitivity" and yet you thought that sensitive viewers was too "insensitive" of a use of the term- David and I will work on a solution and suggest something.

Please let us know your comments on this figure,

Marcie

Trent Reeder

GIS Specialist

SWCA Environmental Consultants

[treeder@swca.com](mailto:treeder@swca.com)

130 Rock Point Dr. Suite A

Durango, Colorado 81303

Work (970) 385-8566

Fax (970) 385-1938

[www.swca.com](http://www.swca.com)

No virus found in this incoming message.

Checked by AVG - [www.avg.com](http://www.avg.com)

Version: 8.5.441 / Virus Database: 271.1.1/3045 - Release Date: 08/02/10 06:35:00



"Melissa Reichard"  
<mreichard@swca.com>  
08/03/2010 09:26 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Marcie Bidwell"  
<mbidwell@swca.com>  
cc  
bcc

Subject RE: FW: Photos of the Marble Quarry

History:  This message has been replied to.

I have Lara working on a map for me. Do you ladies remember where the original shots were taken from? I will be bringing my SLR- do you have any needs for me to use or not use zooms?

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, August 02, 2010 12:22 PM  
**To:** Melissa Reichard; Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Re: FW: Photos of the Marble Quarry

Having Lara do a map would be a good starting point. You'll want her to find a road map (including roads on the Santa Rita Experimental Range) and overlay with some distance markers. Make sure it's around noon on a clear day so shadows and clouds don't alter the colors. The goal is to look at the color of the rock from various distances to see whether it is less white (or bluer, etc.) when viewed farther away.

Two additional thoughts:

1. If you can get even closer to the quarry, get a couple of photos of the rock color right up close too (or even pick up a piece of the white rock!).
2. I recommend re-shooting the more distant photos (5-10 miles) on the same day, just for consistency (same light, weather, camera, etc.).

Thanks!!

Marcie: Jamie's comment was just about the color of the rock at various distances. He did not have issues with the pit looking like it was in front of the mountain (that was a separate comment from Kathy). Also, do you know for a fact that the existing quarry rock is the same type as would be in the upper pit?

"Melissa Reichard" <mreichard@swca.com>

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Marcie Bidwell" <mbidwell@swca.com>

08/02/2010 11:14 AM

cc  
SubjectFW: Photos of the Marble Quarry

Ladies-

I will be going to take these pictures. Can you tell me spots that I should go to that would capture what you are looking for? I don't know where these shots were taken and where spots would be to get the distance and angle that you need. Suggestions? If not, the only other way I can think of would be to ask Lara to get me some sort of map with a couple mile radius. Is that how you would go about this?

Thanks!

Mel

---

**From:** Marcie Bidwell  
**Sent:** Friday, July 30, 2010 4:20 PM  
**To:** Tom Furgason; Jonathan Rigg; Melissa Reichard  
**Subject:** Photos of the Marble Quarry

Hello Tom, Jonathan and Melissa,

So I understand from Debby that we need to photograph the Marble Quarry to see what the rock looks like per Jamie's suggestion for improving the simulations for the pit. Specifically to make it appear less "in front of" the mountain.

I have two pictures that I shared with Debby- she suggested that we needed some that were in closer range with the quarry.

Do you have some one that could photograph the quarry from these approximate distance ranges?

1. 1-2 miles away
2. 3-4 miles away

I have these, which I approximate as being 5 and 10 or so distances.

Thanks!  
Marcie

<<DSC\_0163.JPG>> <<DSC\_0160.JPG>>

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

**Durango, Colorado 81301**

**Office: 970.385.8566**

**Fax: 970.385.1938**

**[www.swca.com](http://www.swca.com)**



"Dale Ortman PE"  
<daleortmanpe@live.com>  
05/28/2010 07:16 AM

To <mbidwell@swca.com>  
cc <sshafiqullah@fs.fed.us>, <mreichard@swca.com>, <jrigg@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>  
bcc  
Subject RE: June 4th Reclamation meeting

Marcie,

At this stage in the process I do not see where a trip to Tucson for the June 4 meeting will be cost effective. Rosemont is working on the basic feasibility of a revised drainage plan and until that is worked out and we have maps of the fundamental topography most everything else is premature. However, if you have other reasons to be in Tucson and the meeting fits your schedule then you are certainly welcome.

Cheers,

Dale

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, May 26, 2010 8:43 AM  
**To:** mbidwell@swca.com; daleortmanpe@live.com  
**Cc:** sshafiqullah@fs.fed.us; mreichard@swca.com; jrigg@swca.com; Debby Kriegel  
**Subject:** RE: June 4th Reclamation meeting

Marcie: I think that the purpose of the meeting is for Rosemont to show us the options for moving tailings cells around and some rough shaping for a canyon-like drainageway on the waste rock. If their presentation can be done on-line, you probably don't need to be in the room to provide comments. If they only bring printed maps, it'd be great if you could be here. I guess I'm also not certain whether we are likely to be doing any preliminary design work on that day or just reviewing Rosemont's options for use by David and Horst to landform later.

Dale: Please advise.

"Marcie Bidwell"  
<mbidwell@swca.com>

05/25/2010 02:04 PM

To "Salek Shafiqullah" <sshafiqullah@fs.fed.us>, "Melissa Reichard" <mreichard@swca.com>, "Dale Ortman PE" <daleortmanpe@live.com>, "Jonathan Rigg" <jrigg@swca.com>  
cc "Debby Kriegel" <dkriegel@fs.fed.us>  
Subject RE: June 4th Reclamation meeting

Hello All,

(thanks for the forward Salek)

I am curious if I am to attend the next meeting in person or on the phone?

My preference would be for in person if its going to involve maps, but I am flexible as to what the change order may allow.

Thanks! let me know  
Marcie

---

**From:** Salek Shafiqullah [mailto:sshafiqullah@fs.fed.us]  
**Sent:** Monday, May 24, 2010 5:47 PM  
**To:** Melissa Reichard  
**Cc:** Debby Kriegel; Marcie Bidwell  
**Subject:** June 4th Reclamation meeting

Hello Mel,  
Marcie also met with us today via conference call. I did not see her name on the invitation list for June 4th. Thanks for checking into this.

Salek Shafiqullah, Hydrologist  
Coronado National Forest  
520-388-8377



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/12/2010 01:16 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: KOP Locations in Tucson

Thanks, that is more legible than my scrawl!  
M

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, January 12, 2010 12:51 PM  
**To:** Marcie Bidwell  
**Subject:** Re: KOP Locations in Tucson

The 3 sites that I mentioned were:

1. Interstate 10 at the Wilmot overpass
2. Oracle and River (probably not at street level, but standing on the hill just northeast of the intersection)
3. Craycroft or Swan between River Rd. and Oracle. I can't remember which I told you about. I recommend driving both to see if there's an ideal spot.

These 3 points represent south, NW and NE Tucson respectively, and would provide pretty widespread coverage. I have a feeling that #1 will be the best spot for any simulations, since it's closer to the project, but otherwise a similar view of the Santa Ritas. However, it's worth taking photos at the other two to confirm this.

Thanks.

"Marcie Bidwell" <mbidwell@swca.com>

01/12/2010 12:32 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject KOP Locations in Tucson

Debby,

I was hoping to record the KOP locations in Tucson while I am here, and I wrote them down wrong when you gave them to me.

Do you still hve your notes?

Thanks!  
Marcie

**Marcie Demmy Bidwell**  
**Environmental Planner**  
**130 Rock Point Drive, Suite A**  
**Durango, Colorado 81301**  
**Office: 970.385.8566**  
**Fax: 970.385.1938**  
**[www.swca.com](http://www.swca.com)**



"Lara Mitchell"  
<lmitchell@swca.com>  
07/21/2010 01:55 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Jonathan Rigg" <jrigg@swca.com>, "Melissa Reichard"  
<mreichard@swca.com>  
bcc

Subject RE: Rosemont West Access Road, Water Line, and Power Line

History:  This message has been forwarded.

Hi Debby

For the MPO and the 3 alternatives the west access road goes through Lopez Pass.

For the MPO the power line goes through Lopez Pass. For all three alternatives, 4 of the power line alternative routes (Preferred Route, Alternative 1, Preferred sub alternative and sub alternative 1) all go through Lopez Pass, one (Alternative 2) comes through farther south, near Box Canyon Road.

For the MPO the water line looks like it comes through Lopez Pass. We are still waiting on water line data. I was told by Melissa that we would receive it on Friday. I don't have any info for the Alternatives water lines until we get that data.

So from what I looked at today, no access road or power line goes through Gunsight Pass. I'll have to get back to you on the water line info.

-Lara

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, July 19, 2010 1:41 PM  
**To:** Lara Mitchell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont West Access Road, Water Line, and Power Line

Lara,

On Friday, we took a hard drive to Tetra Tech and collected GIS data for the MPO and alternatives. When you're back in the office and have time to review this data, please look at the following files for the MPO and each alternative:

- West access road
- Power line
- Water line

Which are over Gunsight Pass? Which are over Lopez Pass?

Thanks!!

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305

[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
 <mbidwell@swca.com>  
 06/03/2009 01:38 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
 cc "Trent Reeder" <treeder@swca.com>, "Charles Coyle"  
 <ccoyle@swca.com>  
 bcc

Subject Analysis Criteria and Bounds of Analysis~

Debby,

In preparing for both this weeks meeting and making progress while you are on vacation, here are a few things.

<<Evaluation Criteria- working draft.doc>>

**1. EVALUATION CRITERIA:**

Here is a draft of starting to role the Issue Statements into Analysis Questions into Indicators of Change.

Please feel free to edit a way; its just a stab at it.

**2. BOUNDS OF ANALYSIS:**

Charles asked that all SWCA and USFS specialists work together to define the following (here are my thoughts). If you agree with this basic outline, I can convert this to a paragraph format quickly. If you would recommend something else, please let me know. Edits are welcomed!

These are his specific requests on bounds:

1. Bounds of analysis: define geographic and temporal parameters of what will be analyzed for visual resources?

- Geographic, will depend on the alternatives and where the viewsheds are in my opinion, but I would say that the bounds would be related to a clear sky view of the Santa Rita Mountains (or project area) on a good air quality day, so would include Tucson, views from 19 and 10, Sonoita, Sahaurita, etc. 3.1.1 *CNF, 83*
- Scales of Analysis- in our Chapter 3 outline, we had discussed using three: Project Viewshed, Santa Rita Mountains, and Coronado National Forest. Generally, I see these as appropriate to tie them to the distance zones that we are using (1) foreground viewsheds (project area and immediate viewsheds), and (2) middleground (close range, Santa Rita mountain views), and far/background (far Santa Ritas, Coronado, Tucson, etc views).

Temporal- Dale Ortman proposed that we all consider construction, operation, reclamation, post-closure. But he did not indicate when Construction and operations would break. I think we have discussed the following: (1) Initial Construction is 0-5 years; (2) Operation includes Installation of the reclaimed berm 5-15 years; Reclamation begins at Final form 20 years, and Post Closure, I would argue should be at a reasonable expectation for a reclamation stage at 20, 50 or 100 (?) years.

*CNF not tied to viewshed. Move analysis of reclamation & cumulative effects.*

Marcie Demmy Bidwell  
 Environmental Planner  
 515 East College Avenue  
 Durango, Colorado 81301  
 Office: 970.385.8566  
 Fax: 970.385.1938

*~~Main Viewshed only east side~~*



[www.swca.com](http://www.swca.com) Evaluation Criteria- working draft.doc

Purpose - to Compare Alts, right?

Visual Resource Issue #1:

Presence of mine-related equipment and vehicles (e.g., drills, loading units, trucks, bulldozers, graders, buildings, tailings, water pipeline, etc.) on Key Observation Points (KOPs), including Scenic Byway SR 83, USFS Scenic Roads (Box Canyon Road [FR 62], Madera Canyon Road/Madera Nature Trail #88, Mt. Hopkins Road [FR 184] may directly affect visual quality.

get revised wording

Analysis Question(s): How will the presence of mine-related equipment and vehicles affect scenic resources? How will these changes affect different viewing populations (e.g. recreation, residents, scenic drivers)? Where will the presence of these activities be visible in the landscape?

Indicator of Change:

- Amount of change in human activity, cultural elements and mix of land uses
- Amount of change in scenic attractiveness and variety of classes to sensitive viewers and important concern areas from changes in activity and cultural elements
- Amount of change compared to existing scenic integrity and future desired conditions
- A change in concern levels due to changes in uses, levels of activity, and quality of view corridors

NO

Use bullet from Issue Statement. Add "Amount" as nec.

Visual Resource Issue #2:

Ground disturbance, topography alteration, and landscape changes resulting from mining-related activities (clearing, grading, deposition of fill material, open pit, waste rock dumps, tailings) may directly result in changes to visual quality.

Analysis Question(s): How will scenic quality be affected from multiple KOPs and for different classes of viewers?

or same 3 from #1?   
 (2) How

Indicator of Change:

- Amount of change in scenic quality from changes to form, line, texture, and color in the Project Area
- Amount of change or contrast due to changes in the patterns of vegetation, landform scale and proportion, etc. (covered in #1) or add to #1
- Amount of change measured in acreage due to ground disturbance within sensitive viewsheds
- Amount of change in concern levels due to changes in scenic quality from landscape manipulation and activity

keep

NO

11 11

**Visual Resource Issue #3:**

Reclamation that includes infrastructure removal and revegetation of waste rock facilities and other project-related landscape disturbance may directly result in affects to visual resources.

New wording

**Analysis Question(s):** How will visual resources be affected by reclamation and revegetation plans? How long will it take before reclamation is successful? What will define reclamation success? What uses will return to the landscape after reclamation?

Good

**Indicators of Change:**

- Length of time until revegetation cover is achieved
- Length of time until vegetation diversity is achieved
- Amount of difference between existing vegetation and revegetated landscape
- Amount of contrast from reclaimed land form and surrounding landscape.

**USFS Scenic Integrity Objectives- Forest Service Guidance**

**Table 1 USFS SMS Scenic Integrity Objectives**

LANDSCAPE THEME	SCENIC INTEGRITY OBJECTIVE
The landscape is intact, with only minute, if any, deviations. The existing character and sense of place should be expressed at the highest level. Human influence from historic use or management should appear completely natural to the majority of viewers.	Very High
The landscape appears unaltered and intact. Deviations may be present, but should repeat the line, form, color, and textures of the existing landscape character so completely, and at such a scale, that they are not evident.	High
The landscape appears slightly altered. Noticeable changes should remain visually subordinate to the landscape character being viewed.	Moderate
The landscape appears moderately altered. Deviations and changes to the landscape may begin to dominate the landscape character. These changes should borrow valued landscape attributes such as size, shape, edge effects, patterns of natural openings, vegetative type changes, or architectural styles that are outside of the altered landscape.	Low

Source: USFS 2000



Marcie Demmy  
<marciedemmybidwell@hotmail.com>

03/13/2009 03:15 PM

To <dkriegel@fs.fed.us>, <ccoyn@swca.com>, <mbidwell@swca.com>

cc

bcc

Subject

History:

✉ This message has been replied to.

Debby,

~I am sending this email from my hotmail as well as SWCA as I am experiencing trouble with me email and want to make sure that you get it before I sign off. Sorry for duplicates if they both arrive!

~~~~~

Debby,

Sorry to hear that we are receiving conflicting messages from our superiors regarding who needs to contact RCC. I will ask Charles and Tom to discuss this with Rita (as Bev is out) and then we can act accordingly.

Here is the word doc outline for Chapter 3, with the visual section inserted into its place in the outline. I did not write the recreation or wilderness section, as I was told that USFS had asked for a new contact. In communicating with Steve Leslie, the new rec person, he said that you had not heard that the change had been made.

As to the outline, I hope it is more readable; I erred in thinking that embedding the doc in the email text would make it easier for you to access.

I will send you the basic template before the weekend. I had hoped to talk with you to clear up some questions that I had before sending it, but hopefully it is close to what you are looking for.

More to follow,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]

**Sent:** Friday, March 13, 2009 1:03 PM

**To:** Marcie Bidwell

**Cc:** Debby Kriegel

**Subject:** Re: Chapt 3 Outline for Visual Resources ~ to continue discussion

Marcie,

I'm looking over your messages from yesterday, have received your voicemail messages, and have some general comments:

1. Your outline format for Recreation and Wilderness has very different headings (theirs use "3.2.4.1" style) and the indents in your message below and the other message with the outline for the visual technical report get really screwed up in email. Can you please check on the requirements for format and resend both to me in a Word document? Then I can edit them and send them back to you. I have many comments on both.
2. I'm no longer overseeing the night skies topic and have told Ben who to contact.
3. Reta and Bev repeatedly tell me that it's not the responsibility for the FS to convince Rosemont of what work is necessary. The FS is to simply let SWCA know what is needed, and it is SWCA's responsibility to do the work.

4. This weekend I will work on the proposal and schedule for visual resources that I've been asking you for. All of the visual resource work ties to this and it's really difficult for me to work on the outlines without it.

Let's talk on Monday.

Debby

"Marcie Bidwell" <mbidwell@swca.com> 03/12/2009  
07:58 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Charles Coyle" <ccoyle@swca.com>, "Ben Gaddis"  
<bgaddis@swca.com>  
Subject: Chap 3 Outline for Visual Resources ~ to continue discussion  
t

Hello Debbie, Thanks for the examples. I read through them and appreciate your approach. Here is the outline for you to review and us to discuss. I look forward to your comments. Also, I understand that you are the point person for Night Sky evaluation as well. Ben Gladdis and I have been put together as a team for this issue. He and I have discussed an approach and he will be contacting you today/tomorrow to discuss as well. If you would rather just interface with one of us, let me know. But together, I think we will have a stronger specialist approach to apply to the project.

Also, just to be complete, I was told that (at USFS request) I am no longer the recreation specialist for this project and that someone else will be your contact person. I am assuming that they have already contacted you, and that this is your preference. Again, let me know if this is incorrect, and we can discuss these other issues as well.

As this is just the Chap 2 AE outline, I was not sure of how we would introduce remediation effects on visual resources, perhaps in EC; so to compliment this section that I just submitted to you, I am working on the Visual Technical Report Outline as well. I will send it along shortly for you to review and then we can discuss how these two tools will compliment each other as well.

Also the table showing the compliment of EIS, Technical Report and other studies has turned out harder to fill in than I thought. It also will be ready for some comments in another hour or so.

Hope we can catch up today,  
Marcie

Windows Live™ Groups: Create an online spot for your favorite groups to meet. [Check it](#)



[out.](#) DRAFT CHAPTER 3 AFFECTED ENVIRONMENT OUTLINE.doc Visual Outline- 2008-03-10.doc

**ROSEMONT PROJECT EIS**  
**DRAFT CHAPTER 3 AFFECTED ENVIRONMENT OUTLINE**  
March 11, 2009

**3.1. AIR QUALITY**

**3.1.1. [pending]**

**3.2. WATER RESOURCES**

3.2.1. Applicable Laws, Regulation, and Policy

3.2.2. Regional Hydrologic Setting

3.2.2.1. Hydrometeorology

3.2.2.2. Surface water

3.2.2.3. Groundwater

3.2.3. State and Local Water Resources Management

3.2.4. Water Resource-Related Regulations

3.2.5. Mine Site Water Resources

3.2.5.1. Surface Water

Washes and Creeks (Natural Drainages)

Waters of the United States

Springs and Seeps Inventory

Surface Water Quality

3.2.5.2. Groundwater

Groundwater Investigation & Modeling

Well Inventory

Groundwater Occurrence and Quantity

Groundwater Flow Direction

3.2.6. Offsite Water Resources

3.2.6.1. Mine Water Supply

Santa Cruz Valley Groundwater Resources (Mine Water Supply)

Groundwater Investigation & Modeling

Groundwater Flow

Groundwater Quantity

Groundwater Quality

3.2.6.2. Tucson AMA Model

3.2.6.3. Sierrita Sulfate Plume Model (FMI-ADWR Consent Order)

3.2.6.4. CAP Recharge

3.2.6.5. Water Resources Downgradient from the Mine Site

Davidson Canyon

Cienega Creek

**3.3. GEOLOGY AND MINERALS**

- 3.3.1. Regional Geology
- 3.3.2. Mine Site Geology
  - 3.3.2.1. Geology (basic geology and structure)
  - 3.3.2.2. Mineral Exploration and Mining History
  - 3.3.2.3. Rosemont Deposit (Rosemont Deposit geology with emphasis on difference between sulfide and oxide ore which is basic to potential ARD issues)
- 3.3.3. Geologic Hazards
  - 3.3.3.1. Seismicity
  - 3.3.3.2. Landslides (this may be just an “Other” category)
  - 3.3.3.3. Subsidence (limited to the known subsidence issues in the Santa Cruz Valley due to groundwater withdrawal)
- 3.3.4. Other Geologic Resources
  - 3.3.4.1. Fossils
  - 3.3.4.2. Caves

**3.4 SOILS AND RECLAMATION**

- 3.4.1 Soil Occurrence and Characteristics
  - 3.4.2.1 General Soil Characteristics
  - 3.4.2.2 Soils Unit Mapping and Description
- 3.4.2 Estimates of Existing Erosion Loss
  - 3.4.2.1 Revised Universal Soil Loss Equation (RUSLE)
- 3.4.3 Existing Disturbance
  - 3.4.3.1 Existing Soil Disturbance
  - 3.4.3.2 Existing Mineral-Related Disturbance
  - 3.4.3.3 Grazing
- 3.4.4 Suitability for Reclamation
  - 3.4.4.1 Soil Salvage and Placement

**3.5 BIOLOGICAL RESOURCES**

- 3.5.1 Biodiversity
- 3.5.2 Terrestrial Resources
- 3.5.3 Aquatic Resources
- 3.5.4 Vegetation Communities
  - 3.5.4.1 Semidesert Grassland
  - 3.5.4.2 Madrean Evergreen Woodland
- 3.5.5 Special Status Plants

- 3.5.5.1 Listed Plant Species
- 3.5.5.2 Other Special-Status Plants
- 3.5.5.3 Invasive Species
- 3.5.6 Special Status Wildlife
  - 3.5.6.1 Listed Wildlife Species
  - 3.5.6.2 Migratory Birds and Raptors
  - 3.5.6.3 Coronado National Forest Management Indicator Species
  - 3.5.6.4 Other Special-Status Wildlife Species
- 3.6 CULTURAL RESOURCES**
  - 3.6.1 Introduction
    - [Federal Legislation regarding Historic Properties and Heritage Resources; definition of APE]*
  - 3.6.2 Previous Archaeological Research
    - [Summary of research in general area and project area, with citations]*
  - 3.6.3 Cultural-Historical Overview
    - [Summary of Prehistoric/Historic Occupational Periods]*
  - 3.6.4 Archaeological Investigations
    - [Research Themes; Definition of Site Types; Inventory Methods & Period of Performance; Criteria for Evaluations of Significance; and Results]*
  - 3.6.5 Ethnohistoric Investigations
    - [Methods; Sources Consulted; Results]*
  - 3.6.6 Consultation with Tribal Governments
    - [Summary of the Process; Tribes Consulted by CNF [matrix of consultation]; and Results]*
  - 3.6.7 Summary of Results
- 3.7 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE**
  - 3.7.1 Study Area
  - 3.7.2 Population, Demographics and Housing
    - 3.7.2.1 Population
    - 3.7.2.2 Ethnicity/Race
    - 3.7.2.3 Housing Inventory
  - 3.7.3 Employment
    - 3.7.3.1 Jobs by Industry
    - 3.7.3.2 Median Income
    - 3.7.3.3 Income Distribution
  - 3.7.4 Economic Activity
    - 3.7.4.1 Economic Output by Industry

- 3.7.4.2 Taxes and Revenues
- 3.7.4.3 Property Values
- 3.7.5 Quality of Life
  - 3.7.5.1 Public Facilities and Services
  - 3.7.5.2 Community Values
  - 3.7.5.3 Social Trends
- 3.7.6 Environmental Justice
  - 3.7.6.1 Minority Populations
  - 3.7.6.2 Low-Income Populations

### 3.8 VISUAL RESOURCES

- 3.8.1 Introduction
- 3.8.2 Regulatory Framework
  - 3.8.2.1 USFS Federal Policy and Guidance: Visual Resource Management
    - 3.6.8.2.1.1 VQOs (manuals, process, etc for each)
    - 3.6.8.2.1.2 SIOs
    - 3.6.8.2.1.3 Wilderness
  - 3.8.2.2 Forest Plan Guidance
    - 3.6.8.2.2.1 Existing policy
    - 3.6.8.2.2.2 Future trends (i.e. current/upcoming Forest Plan process)
  - 3.8.2.3 Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - 3.6.8.2.3.1.1 Scenic Byway visual resource management
    - 3.6.8.2.3.1.2 Patagonia Scenic Byway Corridor Management Plan
- 3.8.3 Existing Landscape Character and Visual Resources (narrative)
  - 3.6.8.3.1.1 Landforms and landscape features
  - 3.6.8.3.1.2 Vegetation
  - 3.6.8.3.1.3 Color
  - 3.6.8.3.1.4 Textures
  - 3.6.8.3.1.5 Structures & land use
- 3.8.4 Viewsheds, View Corridors, and Sensitive Viewers
  - 3.6.8.4.1.1 Project Area
  - 3.6.8.4.1.2 Communities and Rural Development Areas
  - 3.6.8.4.1.3 Santa Rita Mountains
  - 3.6.8.4.1.4 Patagonia Scenic Byway
  - 3.6.8.4.1.5 Wilderness and wilderness study areas
- 3.8.5 Visual Resource Key Observation Points
  - 3.8.5.1 Description of key observation point process & objectives
  - 3.8.5.2 Selection/representation of key observation points

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3.8.6 Trends affecting visual resources

3.8.6.1 Forest management activities

3.8.6.2 Non-forest (i.e. Rural development)

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3.9 TRANSPORTATION/ACCESS

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3.9.1 Highways and Roads Description

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3.9.1.1 U.S. Highways

3.9.1.2 Interstates

3.9.1.3 State Highways

3.9.1.4 County Roads

3.9.1.5 Forest Service Roads

3.9.1.6 Rosemont Mine Roads

3.9.1.7 Private Roads

3.9.2 Highway and Roads Usage

3.9.2.1 Traffic Volume/Counts

3.9.2.2 Roadway Capacity

3.9.2.3 Level of Service

3.9.2.4 Traffic Patterns

3.9.3 Commercial Transportations

3.9.3.1 Interstate Bus Service

3.9.3.2 Local Bus Service

3.9.3.3 Air Service

3.9.3.4 Railroads

3.10 RECREATION AND TOURISM

3.10.1 General Setting

3.10.2 Supply of Recreation Opportunities

3.10.2.1 Recreation Opportunity Spectrum

3.10.2.2 Recreation Places

3.10.3 Existing Use Levels and Trends

3.10.3.1 Forest Use

3.10.3.2 Resident Recreation

3.10.3.3 Tourism

3.10.3.4 Commercial Outfitter and Guide Use [if applicable]

3.11 LIVESTOCK AND GRAZING

3.11.1 Introduction

3.11.2 General Management Direction for Grazing on the CNF

3.11.3 Existing Rangeland Management and Conditions

3.12 LAND USE AND WILDERNESS

3.12.1 Land Status/Ownership

3.12.2 Land Use Plans

3.12.2.1 Forest Service

3.12.2.2 Arizona State Trust Lands

3.12.2.3 Bureau of Land Management

3.12.2.4 Pima County

3.12.3 Land Use

3.12.3.1 Mining

3.12.3.2 Utilities

3.12.3.3 Grazing

3.12.3.4 Recreation

3.12.3.5 Rural Living

3.12.4 Wilderness

3.12.4.1 General Description and Characterization

3.12.4.2 Visitation

3.12.4.3 Access

**3.13 NOISE**

3.13.1 Regulatory Framework

3.13.2 Thresholds of Significance

3.13.3 Ambient Conditions

3.13.4 Noise Receptors

3.13.5 Blasting Noise

3.13.6 Vehicles and Equipment

**3.14 OUTDOOR LIGHTING**

**3.14.1 [pending]**

**3.15 HAZARDOUS MATERIALS**

3.15.1 Petroleum Products

3.15.1.1 Gasoline, Diesel Fuel, and Kerosene

3.15.1.2 Lubricants and Solvents

3.15.2 Mine Processing Fluids and Reagents

3.15.2.1 Sulfuric Acid

3.15.2.2 SX/EW Electrolyte and Processing Reagents

3.15.3 Explosives

3.15.3.1 Ammonium Nitrate

3.15.3.2 Ammonium Nitrate-Fuel Oil Mixtures

3.15.4 Hazardous Waste Management and Disposal

3.15.5 Miscellaneous Chemicals

3.15.5.1 Laboratory Reagents

3.15.5.2 Cleaning Fluids

3.15.6 Transportation of Hazardous Materials

3.15.7 Storage of Hazardous Materials

**3.16 PUBLIC HEALTH AND SAFETY**

3.16.1 Flood Control

3.16.2 Geologic Hazards

3.16.2.1 Seismic Faults

3.16.2.2 Soil Composition

3.16.2.3 Subsidence

3.16.3 Hazardous Materials and Public Safety

3.16.4 Noise

3.16.5 Recreation Hazards

3.16.6 Traffic Safety

3.16.7 Trash Dumping

## **EIS Affected Environment**

1. Introduction
2. Regulatory Framework
  - a. USFS Federal Policy and Guidance: Visual Resource Management
    - i. VQOs (manuals, process, etc for each)
    - ii. SIOs
    - iii. Wilderness
  - b. Forest Plan Guidance
    - i. Existing policy
    - ii. Future trends (i.e. current/upcoming Forest Plan process)
  - c. Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - i. Scenic Byway visual resource management
    - ii. Patagonia Scenic Byway Corridor Management Plan
3. Existing Landscape Character and Visual Resources (narrative)
  - a. Landforms and landscape features
  - b. Vegetation
  - c. Color
  - d. Textures
  - e. Structures & land use
4. Viewsheds, View Corridors, and Sensitive Viewers
  - a. Project Area
  - b. Communities and Rural Development Areas
  - c. Santa Rita Mountains
  - d. Patagonia Scenic Byway
  - e. Wilderness and wilderness study areas
5. Visual Resource Key Observation Points
  - a. Description of key observation point process
  - b. Selection/representation of key observation points
6. Trends affecting visual resources
  - a. Forest management activities
  - b. Non-forest (i.e. Rural development)
  - c. ??
  - d.

## **Visual Technical Report**

1. Introduction/Executive Summary
  - a. Purpose of Specialist Report
  - b. Decision to Be Made
2. Proposed Action and Alternatives
3. Issue Summary and Potential Impacts to Visual Resources

- e. Visual Resources Issue Statement (synopsis from Scoping Report)
  - f. Internal scoping/ Agency analysis factors
  - g. Elements of visual resource management (design considerations)
  - h. Summary of Analysis parameters
7. Regulatory Framework
- a. USFS Federal Policy and Guidance: Visual Resource Management
    - i. VQOs (manuals, process, etc for each)
    - ii. SIOs
    - iii. Wilderness
  - b. Forest Plan Guidance
    - i. Existing policy
    - ii. Future trends (i.e. current/upcoming Forest Plan process)
  - c. Special Plans (Federal, State, Regional: i.e. Scenic Byways)
    - i. Scenic Byway visual resource management
    - ii. Patagonia Scenic Byway Corridor Management Plan
8. Affected Environment
- a. Existing Landscape Character and Visual Resources (narrative)
    - i. Landforms and landscape features
    - ii. Vegetation
    - iii. Color
    - iv. Textures
    - v. Structures & land use
  - b. Viewsheds, View Corridors, and Sensitive Viewers
    - i. Project Area
    - ii. Communities and Rural Development Areas
    - iii. Santa Rita Mountains
    - iv. Patagonia Scenic Byway
    - v. Wilderness and wilderness study areas
  - c. Visual Resource Key Observation Points
    - i. Description of key observation point process
    - ii. Selection/representation of key observation points
  - d. Trends affecting visual resources
    - i. Forest management activities
    - ii. Non-forest (i.e. Rural development)
    - iii. ??
9. Research- Parameters of Visual Resource Protection and Mitigation (Design Considerations)-
- a. Mine Reclamation- form, line, texture, massing, etc
  - b. Habitat Restoration-

- c. Etc
- 10. Assessment Methodology and Analysis Process
  - a. Methods
  - b. Data Sources
  - c. Field Inventory
  - d. Regulatory Framework and Forest Plan Evaluation
  - e. Viewshed Analysis using GIS
  - f. Key Observation Points and Viewshed Analysis/Documentation
  - g. Visual Contrast/Modification Analysis for VQOs/SIOs
  - h. Concern level analysis
- 11. Environmental Consequences
  - 1. Introduction
  - 2. Summary of Visual Issues
  - 3. Indicators and Agents of Change for Visual Resources
    - a. Change in modification level not consistent with Forest Plan goals
    - b. Changes requiring Forest Plan Amendment
    - c. Changes affecting Scenic Byway use
  - 4. Alternative 1
    - a. Direct
    - b. Indirect
    - c. Cumulative
  - 5. Alternative 2
    - a. Direct
    - b. Indirect
    - c. Cumulative
  - 6. Commitment of Irretrievable Resources
  - 7. Consistency with Forest Plan Objectives



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/09/2010 04:58 PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Kathy Arnold"  
<karnold@rosemontcopper.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>, "Tom Furgason"  
cc  
bcc

Subject Update Status of Progress RE: Visualization Coordination  
Meeting, Notes and Follow Up Questions

History: This message has been replied to.

Hello Debby, Kathy, Tom and David,

David and I discussed both of our questions and we offer the following as the answers for your approval/agreement:

- 1. Simulations by SWCA and Viewshed Analysis by Tetra Tech will use the same contours as base data so that the two tools are consistent and comparable for the analysis.**
- 2. Alternatives will all be shown as "raw" contours, rather than a mix of stages of engineering resolution. Thus the MPO and Phased Tailings will be shown as the un-smoothed versions, such as Figure 11 in the Reclamation (and not use the reclamation contours presented for the MPO in Figure 12 of the reclamation plan as asked below).**
- 3. SWCA will use the contours "as given" to us from Tetra Tech and show benches where designed in the "raw" format.**
- 4. Tetra Tech will provide SWCA with a sketch of stormwater runoff for "watershed design" and SWCA will use these sketches to approximate the location of stormwater channels. Tetra Tech will include notes where there are major go/no go changes in the stormwater planning (anticipated).**
- 5. For the SWCA simulations, reclamation will be generalized for all of the alternatives in a similar fashion.**

Thank you, (David, did I miss anything?)  
Marcie

**See notes in bold below to show specific answers to questions.**

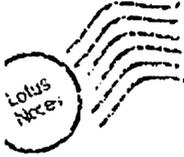
---

**From:** Marcie Bidwell  
**Sent:** Wednesday, February 03, 2010 4:24 PM  
**To:** 'Kathy Arnold'; 'Debby Kriegel'; Tom Furgason; Carrasco, Joel; 'Krizek, David'; 'Keepers, Ashley'; Trent Reeder  
**Subject:** Visualization Coordination Meeting, Notes and Follow Up Questions

**MPO- Specific Questions-**

1. Please confirm **which presentation of the MPO grading** we should use for **vizualizations at Y10** is as presented in **Figure 9** of the Reclamation and Closure Plan (RCP). **SWCA will show benches as presented in Figure 9, but will use the updated contours as recently delivered by Tetra Tech.**
2. Please confirm **which presentation of the MPO grading** we should use for **visualizations at Y20** should be shown as **Figure 11** or **Figure 12** of the RCP. **Figure 11, without the final reclamation grading.**
3. Please indicate what the **geodatabase layer name** is that will have the **"composite of yearly reclamation areas"** in the data provided. **SWCA will not use this "composite" for the MPO as a detailed phasing diagram does not exist for each alternative. SWCA will generalize the reclamation as starting at the bottom and adding a new ring with each year (the yearly rings will not be super pronounced by YR10).**
4. SWCA understands that the MPO should show benches as the following: waste rock, as 100 ft running slopes for each bench and approximately 100ft wide road/bench surface; and tailings as 50 ft benches and running surface; the attached image shows the output from the MPO with benches as submitted. **Please confirm if this is what we should use for final grading. As stated above, grading will be used as delivered. Generally, these descriptions apply to each alternative, with some exceptions to be noted by Tetra Tech.**

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



Beverley A  
 Everson/R3/USDAFS  
 02/09/2010 05:19 PM

To "Marcie Bidwell" <mbidwell@swca.com>  
 cc "Dale Ortman PE" <daleortmanpe@live.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Kathy Arnold" <karnold@rosemontcopper.com>, "Tom Furgason"  
 bcc  
 Subject Re: Follow up request for Reclamation photography

Marcie,

I received some CDs from some of the field trip participants, but I'm pretty sure that there were a lot of photos that I did not get copies of. I have not made a library out of the pictures, or otherwise organized them.

I think that the quickest way to get the pictures from those of you that were on field trips (all those cc'd in this email) to Marcie is for all of you to provide her with any pictures you have that you think would respond to her request.

I'll check to see what photos I have that would be helpful to you, Marcie.

Bev

Beverley A. Everson  
 Forest Geologist  
 Coronado National Forest  
 300 W. Congress Street, 6th Floor  
 Tucson, AZ. 85701

Voice: 520-388-8428  
 Fax: 520-388-8305

"Marcie Bidwell" <mbidwell@swca.com>  
 To "Beverley A Everson" <beverson@fs.fed.us>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Kathy Arnold" <karnold@rosemontcopper.com>, "Tom Furgason" <tfurgason@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Dale Ortman PE" <daleortmanpe@live.com>  
 cc  
 Subject Follow up request for Reclamation photography  
 t

Hello Bev and Debby,

I understand from Tom that Bev collected the images of the mine tours from everyone's personal cameras and then built a common library of images.

I am looking for good reference images of reclaimed sites that will show vegetation patterns (both

intentional and volunteer). Additionally, we could use some images of mining facilities, as a few of the simulation views will have straight views into the pit and mine works.

Bev, Would there be any good ones in the files that you created/shared with everybody?

I would prefer to receive these as digital files, and we can save the USFS images on the Web Ex for convenient sharing.

Thank you for your assistance!

Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
10/27/2009 12:15 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Bounds of Analysis for Visual Resources

Debby,

Sorry I missed you on Friday, still trying to exhale!

Wow, lots to digest in there. Lets try to catch up this afternoon. In meetings until 3:30 or so AZ time.

Looking forward to learning what I missed.  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, October 21, 2009 3:26 PM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Bounds of Analysis for Visual Resources

Hi Marcie,

Welcome back. Hope you had a fun trip to Yosemite and got some good weather!!

I'm not sure how to stick with entirely political boundaries unless we make it a huge area (i.e., include all counties where the project might be visible from). Since this is for visual resources, it'd be great to use entirely viewshed boundaries. At some distance, the visual effects are so far away that they're a moot point. On the Coronado there is a single telescope building on a mountaintop that can be seen from 40+ miles away, so for a mine the size of Rosemont, we'd want to go farther than that. I'd guess that mountains will block the views NW of the Tucson valley, but it'd be nice to verify that. I also don't want you (or Trent) to spend hours and hours on this, unless you think it's important. I do think we need to minimally extend the boundary east to the top of the Whetstones. One additional option would be to forget political boundaries and mountains, and just draw a big rectangle around the whole area we'll be looking at further. That's sort of what some resources did. The north boundary could still follow the Pima County line, south boundary would still be Mexico, east boundary would be just east of the Whetstones, and west boundary just beyond the mountain range that the current boundary line follows. What do you recommend?

Also wanted to let you know that I called Horst Schor (the author of Landforming) and discussed the Rosemont project with him and whether he might be able to help with landforming primarily for visual quality and hydrology, as we move toward refining alternatives. He has a consulting business which specializes in geomorphic restoration and revegetation, and he told me that his personal mission in life is to "scar up less of the earth's surface." He has 30 years experience in this work, his background includes civil engineering, environmental studies, geotech, and urban planning. He's worked on hard rock mines, including a molybdenum mine in New Mexico with 1000' high tailings dumps and immediately had some ideas for reshaping Rosemont's waste piles. He's worked with numerous government agencies, the public, landscape architects, and others. He has a truly unique set of skills, and I have recommended to our folks that we get him involved in Rosemont. Assuming we find money for him, your work wouldn't really change...we'd just add Horst to the mix. I asked Horst to provide a proposal for an initial visit to Tucson and the project site, and Mindee is going to ask Rosemont to fund this. Alternately, he could

probably be added to the MOU (maybe even as a subconsultant to SWCA?). What do you think?

I'm sure you're just catching your breath, and I'm out in the field all day tomorrow. Maybe we can talk on Friday?

Debby

"Marcie Bidwell" <mblidwell@swca.com>

10/21/2009 12:29 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Walter Keyes" <wkeyes@fs.fed.us>  
cc  
Subject RE: Rosemont Bounds of Analysis

Debby,

We can and if so, should do so soon.

**Brainstorming options:**

1. use all political boundaries
2. use a viewshed analysis to generate the polygons, but how does one pick the alternative to decide what is visible from where? The viewsheds are huge running up towards Tucson proper?

Its kind of hard, unless we cut it off somewhere.....

Just off the cuff thinking....

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]

**Sent:** Wednesday, October 21, 2009 1:17 PM

**To:** Walter Keyes; Marcie Bidwell

**Cc:** Debby Kriegel

**Subject:** Fw: Rosemont Bounds of Analysis

I just briefly looked at each of these (which is very interesting), and I had a couple of thoughts:

Walt: Shouldn't the transportation Bounds include the mine's access road (and/or forest roads between 83 and the mine)?

Marcie: The SW edge of the Bounds for visual resources follows a ridgeline, but the other boundaries are political. This bothers me a bit, especially where the eastern Pima County line cuts off on the west flank of the Whetstone mountains. The project will easily be visible from there, but the ridge is in Cochise County.

Can we revisit this sometime soon?

Thanks.

----- Forwarded by Debby Kriegel/R3/USDAFS on 10/21/2009 12:11 PM -----

**Melissa Reichard**  
<mreichard@swca.com>  
Sent by:  
rosemonteis  
<notify@weboffice.com>

To Tom Furgason <tfurgason@swca.com>, Tami Emmett <temmett@fs.fed.us>, Reta Laford <rlaford@fs.fed.us>, Larry Jones <ljones02@fs.fed.us>, Sarah Davis <sdavis@fs.fed.us>, Debby Kriegel <dkriegel@fs.fed.us>, Beverly Everson <beverson@fs.fed.us>, Art Elek <aelek@fs.fed.us>, Teresa Ann Ciapusc <tciapusc@fs.fed.us>, Deborah Sebesta <dsebesta@fs.fed.us>, Kendall Brown <kbrown03@fs.fed.us>, Salek Shafiqullah <sshafiqullah@fs.fed.us>, George McKay <gmckay@fs.fed.us>, Eli Curiel <ecuriel@fs.fed.us>, Mary Farrell <mfarrell@fs.fed.us>, Robert LeFevre <rlefevre@fs.fed.us>, Mindee Roth <mroth@fs.fed.us>, William Gillespie <wgillespie@fs.fed.us>

10/14/2009 03:48 PM

cc Melissa Reichard <mreichard@swca.com>  
Subjec Rosemont Bounds of Analysis

t

Some of you mentioned in today's meeting that you hadn't seen these. So, I have uploaded the new drafts of the bounds of analysis maps. The only changes that were made were ones for the resources that depended on project footprint. Those were reconfigured to include the project areas of the alternatives.

Any further question should be directed to Bev or Tom.

I hope this helps!

Thanks!

Mel

<<https://rosemonteis.webexone.com/r.asp?a=12&id=25518>>



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/24/2010 12:18 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Chelsa Johnson"  
<Cjohnson@epgaz.com>

cc

bcc

Subject Review of images, alternatives and CLs

Hello Debby,

I worked with Chelsa today to review the images proposed for simulations.

I am thinking with about 85% certainty that the views EPG/FS have selected will not involve views of the alternatives, but I recommend that the USFS forward the GIS layers for google earth 3D files and footprints of the alternatives to EPG to determine that for sure.

Additionally, I mentioned to Chelsa that you had forwarded new CLs and that she would want to obtain those from the USFS as well. She has used those in her analysis to determine sensitive viewers and sensitive areas.

Finally, Chelsa and I discussed that EPG is evaluating the siting of the transmission line and that for their purposes the mine and its associated workings (including the waterline) will be considered "existing conditions" as if there is no mine, there would be no line. This is mostly for your information, (nothing to decide here unless you have comments). The EIS should cover the ancillary facilities, as I understand it.

**Please forward (1) CLs and (2) the alternatives GIS files to Chelsa, if its appropriate.**

Thanks,  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



Melinda D Roth/R3/USDAFS  
11/13/2009 12:37 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Re: Horst Schor's Initial Visit

You have my go ahead. Tom is also looking to engage an engineer with years of experience regarding erosion, sedimentation, and stability issues. Ask him also about George Annandale.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
11/13/2009 12:14 PM

To Beverley A Everson/R3/USDAFS@FSNOTES, Melinda D  
Roth/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
Subject Horst Schor's Initial Visit

Horst was able to get liability insurance, and Tom is proceeding with a contract and setting up dates (possibly Dec 2-4).

In the mean time...

1. Horst's proposal below lists a number of maps and reports that he would like to have available on the first day, and most of these I don't have. Can I ask SWCA to pull these items together?
2. Horst also mentions 4 topics to discuss. Much of this is similar to the presentation Tom did recently for the Regional Leadership Team. Can I ask Tom to make a presentation on the first day?

— Forwarded by Debby Kriegel/R3/USDAFS on 11/13/2009 11:47 AM —



Melinda D Roth/R3/USDAFS  
10/27/2009 04:33 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc  
Subject Re: Fw: Rosemont Mine - Landforming Expert

Rosemont has agreed to fund this proposal. SWCA will take the lead to contract Horst's services. A couple of Rosemont people would like to be included in the 3-day review and discussion and could both add to and learn from the discussion. I'll ask Tom at SWCA to keep you tightly in the loop.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42

Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

**Debby Kriegel/R3/USDAFS**

10/21/2009 12:18 PM

To Melinda D Roth/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES

cc

Subject Fw: Rosemont Mine - Landforming Expert

Can you provide an answer to this question?

----- Forwarded by Debby Kriegel/R3/USDAFS on 10/21/2009 12:18 PM -----



**Jeanine Derby/R3/USDAFS**

10/13/2009 11:10 AM

To Debby Kriegel/R3/USDAFS@FSNOTES

cc Beverley A Everson/R3/USDAFS@FSNOTES, Francisco  
Valenzuela/WO/USDAFS@FSNOTES, Kent C  
Ellett/R3/USDAFS@FSNOTES, Reta  
Laford/R3/USDAFS@FSNOTES, Roger D  
Congdon/R3/USDAFS@FSNOTES, Salek  
Shafiqullah/R3/USDAFS@FSNOTES, Robert  
Cordts/R3/USDAFS@FSNOTES

Subject Re: Rosemont Mine - Landforming Expert

An assessment (costing \$7500), could provide a useful comparison with what the company proposes for landform shaping as part of reclamation in their mitigated POA. That seems like a reasonable expenditure, does our MOU allow spending Rosemont \$ for that?. We might want a follow-up cost estimate that addresses all alternatives. Then the challenge becomes, who pays for that. (I added Bob Cordts to the mailing list, representing minerals.)

Jeanine Derby, Forest Supervisor  
Coronado National Forest  
phone: 520 388-8306  
FAX: 520 388-8305  
Debby Kriegel/R3/USDAFS

**Debby Kriegel/R3/USDAFS**

10/13/2009 07:35 AM

To Jeanine Derby/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES, Reta  
Laford/R3/USDAFS@FSNOTES, Salek  
Shafiqullah/R3/USDAFS@FSNOTES, Francisco  
Valenzuela/WO/USDAFS@FSNOTES, Roger D  
Congdon/R3/USDAFS@FSNOTES, Kent C  
Ellett/R3/USDAFS@FSNOTES

cc

Subject Rosemont Mine - Landforming Expert

I learned of Horst Schor after reading his book "Landforming", which describes how to re-contour man-made landscapes to restore natural hydrology and mimic the surrounding landscape.

Last week I called him to discuss whether he might be able to help with the Rosemont project. He has a consulting business which specializes in geomorphic restoration and revegetation, and he told me that his personal mission in life is to "scar up less of the earth's surface." He has 30 years experience in this work, his background includes civil engineering, environmental studies, geotech, and urban planning. He's worked on hard rock mines, including a molybdenum mine in New Mexico with 1000' high tailings dumps. He's worked with numerous government agencies, the EPA, the public, and others.

He has a truly unique set of skills, and I recommend that we get him involved in Rosemont immediately. The land forms associated with Rosemont are an integral part of the alternatives that will be fleshed out soon, so his input would be timely. Landform shaping is not mitigation; it effect the footprints of alternatives, hydrology, how tailings would be placed, etc.

It is clear that the Forest Service, SWCA, and Rosemont do not have the skills necessary to do this type of work. We need help.

I asked Horst to provide a resume and a proposal for an initial visit to Tucson and the project site. See his message and attachments below.

How can we make this happen?

----- Forwarded by Debby Kriegel/R3/USDAFS on 10/13/2009 06:57 AM -----



"Horst" <hjschor@jps.net>

10/12/2009 08:34 AM

To ""Debby Kriegel"" <dkriegel@fs.fed.us>

cc

Subject Rosemont Copper Project

Dear Debby,

I have reviewed some of the essential components of the data concerning the above referenced project you submitted to me and have the following general observations to make:

It is obvious that the proposal as outlined will represent a radical and permanent alteration of the of the entire geomorphology, hydrology and vegetative cover of the area – all of which will of course have a direct impact on the visual quality. Not only will the site that is directly impacted by the massive, proposed fill structure be effected, but also the surrounding landscape, in particular the land downstream.

Diversions and concentration of flows in large (hardened?) channels will destroy the surrounding downstream runoff patterns thereby damaging the plant life it once supported. This is particularly critical in sparse rainfall regimes such as yours.

The proposed monolithic dump structure is clearly devoid of any natural topographic features or natural analogs characteristic of the local landscape and purely designed for efficient excavation, hauling and placement. The design plan developed appears fairly refined and advanced and probably in the mind of the future operator meets his ultimate business plan.

Because of the magnitude of this proposal the challenge will clearly be how to develop a more environmentally responsible and responsive reclamation and restoration plan that will also meet the operational needs of the mine proponent.

However – if there is the will - there is also a way. An “engineered” fill structure with all the characteristics of the conventional, traditional approach to reclamation design is neither the best nor the only alternative available in today’s world. Short term efficiency must be weighed against **long term** impact and performance.

I am of the belief that future generations deserve better from us and that we have a responsibility to leave a more environmentally concerned legacy behind after we extract the “valuables” from the earth.

Debby, attached you will find my Resume/Biography and the Draft Proposal.

Please do call me after you have reviewed this and let me know if there are any questions.

Best regards,

Horst



Biography-Resume for Rosemont Copper Project in Arizona.doc Draft proposal for Rosemont Copper Project in Arizona.doc

## HORST J. SCHOR RESUME/BIOGRAPHY

Mr. Schor's professional career spans more than 30 years and has included civil engineering and land planning for, and the management of the development of large scale hillside mixed use Planned Communities in southern California, i.e. Anaheim Hills 4,300 acres and Talega, 3,000 acres both in the County of Orange. During this time he developed his Landform Grading and Revegetation Concept to replicate natural slope and landforms as a means to mitigate for natural topography and landscape destroyed by human activities or natural processes.

Since 1991 he has been an independent consultant to private and public entities specializing in Land Development Projects and in Landform/Geomorphic Creation or Restoration Projects for various private clients and public entities, such as The City of Los Angeles Department of Water and Power, The United States Environmental Protection Agency, Syncrude Oil of Alberta, Canada, the State of Kentucky EPA, the Virginia Department of Mines, Minerals and Energy, the State of New Mexico Land Office, Chevron Mining Corporation and the Navajo EPA Water Quality Division.

In 1999 he was appointed by the United States Environmental Protection Agency to a six member panel of experts as a landform/geomorphic restoration specialist to develop improvements in the mining reclamation process in the mountain top removal/valley fill of coal mining in the Appalachian Mountains. He also participated in numerous forums conducted by OSM (Office of Surface Mining), EPA, Mining Engineers Panels, and others.

He has provided mine reclamation consulting in diverse locations including the oil sands operations at Fort McMurray in Northern Alberta, Canada, coal mining in the Appalachian Mountains and on the Navajo Reservation, and most recently, in northern New Mexico on a large molybdenum mine.

He holds degrees in Civil Engineering and Land Surveying and in Geography with a specialization in Urban Planning. He is a member of the American Society of Civil Engineers.

Articles on his "*Landform Grading and Revegetation*" concept have been published by the American Society of Civil Engineers Geotechnical Journal, the Urban Land Institute, Landscape Architect and Specifier News, the Los Angeles Times and others. He has also received an Award of Merit from the American Planning Association for his concepts.

Mr. Schor has regularly presented his concepts as a guest lecturer at the University of Wisconsin College of Engineering, the University of California at Irvine and also, at the invitation of the University of Dresden's, (Germany) School of Landscape Architecture.

In 2007 John Wiley & Sons, Inc. published his book entitled "*Landforming; an Environmental Approach to Hillside Development, Mine Reclamation and Watershed Restoration.*"

**HORST J. SCHOR**  
**DRAFT PROPOSAL FOR INITIAL CONSULTING ASSIGNMENT**  
**ROSEMONT COPPER PROJECT**

October 12, 2009

Three day trip to Tucson and the project site consisting of:

1. First day – **am** flight in - **pm** introductory meeting and initial review of plans and documents.
2. Second day – all day office meetings and field trip to site.
3. Third day – **am** follow up meetings and discussions, **pm** return flight

While there, I would like to review any full size plans available including maps of the existing topography and hydrology, aerial photos, mine grading and drainage plans and proposals, available geologic and soils maps and any geotechnical reports and findings, EIS documents as well as anything else that would help me formulate a picture of the situation and to arrive at possible alternative approach concepts to it.

I would to also like to be informed of the following:

1. A brief history of events that led to the current stage
2. The mine proponent's position regarding his proposal
3. A summary of the various inputs both pro and con that have been received so far
4. The local, regional, state and federal agency positions and **politics** of this proposed project

I am estimating the cost to be as follows:

Three days consulting: 3 days x 8 hours x \$250/hr = \$6,000

Travel expenses ..... =\$1,500

Total estimated proposal.....=**\$7,500**

The travel expense estimate is based upon a round trip flight from Orange County to Tucson, two nights accommodation in Tucson, three days car rental and gas, three days meals.



Kathy Arnold  
<karnold@rosemontcopper.com>

08/14/2009 08:00 AM

To Debby Kriegel <dkriegel@fs.fed.us>

cc

bcc

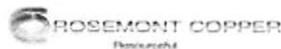
Subject RE: Soil Tech rock staining products/msds sheets

History:

This message has been forwarded.

I thought that would be a perfect way to handle it – Thank you.

Kathy Arnold | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



Rosemont Copper Company  
P.O. Box 35130 | Tucson, AZ 85740-5130  
3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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**From:** Debby Kriegel [<mailto:dkriegel@fs.fed.us>]  
**Sent:** Friday, August 14, 2009 7:49 AM  
**To:** Kathy Arnold  
**Subject:** RE: Soil Tech rock staining products/msds sheets

Kathy: I'll discuss these concerns with the Permeon rep at today's meeting. Thanks. Debby

Kathy Arnold  
<karnold@rosemontcopper.com>

To Beverley A Everson <beverson@fs.fed.us>

cc Debby Kriegel <dkriegel@fs.fed.us>, Holly Lawson <hlawson@rosemontcopper.com>,

Jamie Sturgess <jsturgess@augustaresource.com>

08/13/2009 05:11 PM

Subject RE: Soil Tech rock staining products/msds sheets

t

Bev –

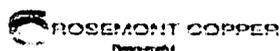
Right now I think that you will see Jeff Cornoyer, Dennis Fischer, and Holly Lawson from Rosemont. I believe that David Krizek and possibly one person from Sage also plan to attend although I am not in a position to confirm that.

We may have a site that could be used to test the product however, Debbie asked if I needed additional information and I have not had an opportunity to get back to her and tell her yes that I do before we can allow this

to be sprayed on our lands. The MSDS information is out of date – MSHA regulations require we have MSDS's available for our people that are no more than 1 year old and the one provided was over 5 years old. The attached letters that had environmental information did not have the laboratory sheets attached so it was impossible to tell the levels of manganese that the product added to stormwater in the testing. I am also concerned with the quality of the MSDS – there is no way to tell without extensive laboratory profiling what the waste management requirements for unused product will be. We need additional information before I can approve it for use.

Thanks –  
Kathy

Kathy Arnold | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



Rosemont Copper Company  
P.O. Box 35130 | Tucson, AZ 85740-5130  
3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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**From:** Beverley A Everson [mailto:[beverson@fs.fed.us](mailto:beverson@fs.fed.us)]  
**Sent:** Thursday, August 13, 2009 11:39 AM  
**To:** Kathy Arnold; Debby Kriegel  
**Subject:** Re: Soil Tech rock staining products/msds sheets

Hi Kathy,

Can you tell me for sure what Rosemont staff will be at the meeting? More importantly, are there any field test areas that you can suggest?

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

Kathy Arnold <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>

08/06/2009 05:26 PM

To: "beverson@fs.fed.us" <[beverson@fs.fed.us](mailto:beverson@fs.fed.us)>

cc  
SubjectRe: Soil Tech rock staining products/msds sheets

Thanks!  
Kathy Arnold  
Director Environmental & Regulatory Affairs  
Rosemont Copper Company  
P.O. Box 35310  
Tucson, AZ 85740

Cell 520-784-1973  
Phone 520-297-7723

**From:** Beverley A Everson <beverson@fs.fed.us>  
**To:** Debby Kriegel <dkriegel@fs.fed.us>; Kathy Arnold; Jamie Sturgess  
**Sent:** Thu Aug 06 19:01:28 2009  
**Subject:** Soil Tech rock staining products/msds sheets

Debby,

One of the areas that Rosemont is considering using for test staining next week is in their revegetation test plot areas, where they are transplanting the plants grown in U of A's Extension College nurseries. Kathy Arnold today expressed concern that the staining may interfere with the test conditions and the U of A research. Can you please ask Soil Tech for MSDS sheets for Permeon and Plastex?

Thanks.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305



tfurgason@swca.com

11/19/2009 05:32 PM

Please respond to  
tfurgason@swca.com

To "Jamie Sturgess" <jsturgess@augustaresource.com>

cc "Debby Kriegel" <dkriegel@fs.fed.us>, "Dale Ortman" <daleortmanpe@live.com>, "Melissa Reichard" <mreichard@swca.com>, "Beverley A Everson"

bcc

Subject Re: Site tour request for Horst Schor on Dec 10

Jamie, It would be fine if you would like to attend the site visit with Horst on December 10. I have yet to receive the details, but it would probably work best for the FS team to meet you at, or near the site. I will let you know our schedule as it is developed. Tom

Sent from my Verizon Wireless BlackBerry

**From:** Sturgess Jamie <jsturgess@augustaresource.com>

**Date:** Wed, 18 Nov 2009 20:18:33 -0700

**To:** Tom Furgason <tfurgason@swca.com>

**Cc:** Debby Kriegel <dkriegel@fs.fed.us>; Dale Ortman PE <daleortmanpe@live.com>; Melissa Reichard <mreichard@swca.com>; Beverley A Everson <beverson@fs.fed.us>; Melinda D Roth <mroth@fs.fed.us>; Kathy Arnold <karnold@rosemontcopper.com>; Reta Laford <rlaford@fs.fed.us>

**Subject:** Re: Site tour request for Horst Schor on Dec 10

Tom: If I can make it, I would very much like to attend. As you know, we are very challenged by the combination of height, elevation, slope length, stormwater management, materials, erosion resistance, and footprint, to make the best landform topography. The constraints of footprint, drainage basin, slope angle, and slope length, challenge our design criteria.

But we have not surrendered, and I am confident that the recent addition of Horst Borsch, George Annendale, and others, to the collective team effort, can help us to find the best solution to the challenges.

Best regards,

Jamie Sturgess

On 11/18/09 12:28 PM, "Tom Furgason" <tfurgason@swca.com> wrote:

Kathy,

The Coronado would like Rosemont to assist with a tour of the Rosemont Project area on Thursday, December 10. Horst Schor would like to visit the site on that day to gain a better understanding of the terrain and the surrounding geography. Debby and I also think that it would be useful if a representative from Rosemont accompanied the tour along with your surface water hydrologist(s) (Tetra Tech?). It is unclear what exactly Horst will be interested in discussing during the site visit, but I'd like Rosemont to be prepared to discuss issues related to managing hydrology with respect to placement of the waste and tails.

Horst will also be meeting with the Coronado on the morning of December 11. We are uncertain if he'll have any follow-up questions for the Rosemont team, but would there be any way to have your surface water hydrologists tentatively hold a few hours open at that time?

Please note that this is the second of two surface water/landforming site visits. The first will be conducted with Annandale next week. Feel free to call me or contact Debby directly (388-8300) if you have any questions. Thank you for your assistance.

**Tom Furgason**

Program Director  
SWCA Environmental Consultants  
343 West Franklin Street  
Tucson, AZ 85701  
(520) 325-9194 ext. 110  
(520) 820-5178 mobile  
(520) 325-2033 fax



"Terry Chute"  
<tjchute@msn.com>  
08/17/2010 08:23 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject Re: Rosemont Cumulative Effects

History:

 This message has been replied to.

Hi Debbie,

Sorry I have not gotten back to you sooner. This week is chock full of meetings and editing. I can meet with you either late this afternoon (say 3 or 3:30) or early Thursday morning. Let me know what works for you.....Terry

**From:** Debby Kriegel  
**Sent:** Monday, August 16, 2010 8:04 AM  
**To:** Terry Chute  
**Subject:** Re: Rosemont Cumulative Effects

On Aug 11, you wrote "I am going to review the list, and I hope to start tomorrow, but I know nothing about the projects on it, so I cannot be the one to say it is final and up to date. Let's bounce this off Tom, perhaps early next week, and see what we can get going. If we can come to a verbal agreement of what we are looking to do, you can modify your proposal to match and we can get it to SWCA. One big unknown to me is how much effort and research it will take to get the boundaries and locations of all the actions - so they can be digitized into a GIS layer. Let's discuss next week."

Yes, let's discuss. I'm in all week, except Wednesday. What works for you ?

"Terry Chute" <tjchute@msn.com>

08/13/2010 01:40 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject Re: Rosemont Cumulative Effects

Debby,

Did we set up a time to get together to discuss this?? I can't remember....it's been one of those weeks...Terry

**From:** Debby Kriegel

**Sent:** Wednesday, August 11, 2010 2:52 PM  
**To:** Terry Chute  
**Cc:** Melinda D Roth ; Reta Laford ; Debby Kriegel  
**Subject:** Re: Rosemont Cumulative Effects

Thanks Terry. See my answers in red.

"Terry Chute" <[tjchute@msn.com](mailto:tjchute@msn.com)>

To "Melinda D Roth" <[mroth@fs.fed.us](mailto:mroth@fs.fed.us)>, "Reta Laford" <[rlaford@fs.fed.us](mailto:rlaford@fs.fed.us)>, "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>

08/11/2010 01:07 PM

cc  
Subject: Re: Rosemont Cumulative Effects  
t

Debby,

While I think it is a good idea to show the bounds of a cumulative effects area on a map, I have a couple concerns or questions about your proposal.

1. It is not clear to me what the added value of the 1902 map is. Seems like we can show past, present and reasonably foreseeable on the current map. Your thoughts helping me understand would be good. I don't see a better way to show past actions through time (like the growth of cities/towns, new highways, and the shrinking of protected lands like the Santa Rita Experimental Range). Interestingly, the 1902 maps will show a few places where resources are less impacted today (like mining towns that disappeared and the designation of wilderness).
2. Timing - are you anticipating getting this done and using it for the DEIS? Seems like getting all the past & reasonably foreseeable actions on one map could be a big chunk of work, and I am concerned about it holding up the process. The list of past, present, and future actions is still very draft. As this list gets worked on, it could be a great time to do this mapping. Perhaps the maps won't be complete by the DEIS...but if the mapping goes relatively smoothly, maybe it could. I don't see this as holding up anything, though some resources (myself included) could do a better job with cumulative effects analysis with the map, so doing it before the DEIS is published would be best.

Eventually each resource will need their own map of their cumulative effects analysis area, and mapping of past, present and reasonably foreseeable actions may or may not be desirable.

Some past, present and reasonably foreseeable actions will be relevant to a particular resource, while others will not. I can see that it would be useful to have one master map that you could turn past, present and foreseeable action on or off, print a map with the relevant one turned on for a particular resource, and add the cumulative effects analysis area. I'm just not clear on how much time and effort this will take, and whether we have the luxury of getting this done in time to use it for the DEIS.

The other thing that worries me is the accuracy of the Reasonably Foreseeable list, and I do not know if we even have a list of past and present actions that specialists need to consider. We need to get on top of that, and I have no idea whether there is someone tasked with finalizing those or not. I would not want SWCA or anyone else researching out project polygons for project that we (FS) have not determined to be part of a "final" list. I thought you were going to review the draft list. Is that not true?

Perhaps there is a middle ground that we can get to where we use the best current base layer we have (do not invent a new one) and (1) finalize the list of past, present and foreseeable actions that are accurate and relevant (i.e., make sure that actions are truly foreseeable) ; (2) decide which ones are best depicted on a map (some, like Forest Plan Revision, do not lend themselves to mapping); and (3) decide how to provide maps to individual specialists that are useful and depict the past, present and reasonably foreseeable actions that are meaningful for their particular resource. If we can do that with a few days of work - and provide it to the specialists in a timely manner - it is probably worth doing. Otherwise we may need to look at this for the FEIS and do the best we can for the DEIS, which may mean describing the cumulative effects analysis area and listing the applicable past, present and reasonably foreseeable actions in the text of Chapter 3.

Sounds good to me. And I would expect that a good GIS person, and some coordination with team members (individually or at a meeting) could do this in a timely manner.

**From:** Debby Kriegel  
**Sent:** Wednesday, August 11, 2010 12:44 PM  
**To:** Melinda D Roth ; tjchute@msn.com ; Reta Laford  
**Cc:** Debby Kriegel  
**Subject:** Rosemont Cumulative Effects

As I think about cumulative effects analysis needed for Rosemont (and consider the bounds of analysis maps for various resources), I believe that some additional GIS mapping would be helpful for the IDT, the public, and decisionmaker in order to fully understand cumulative effects.

I've drafted a scope of work (just over 1 page) and would appreciate your thoughts. Tom Furgason told me that SWCA has several GIS specialists on staff.

Thanks.



"Marcie Bidwell"  
<mbidwell@swca.com>  
05/19/2010 03:08 PM

To "Kathy Arnold" <karnold@rosemontcopper.com>, "David Krizek" <david.krizek@tetrattech.com>  
cc "Debby Kriegel" <dkriegel@fs.fed.us>, "Keepers, Ashley" <Ashley.Keepers@tetrattech.com>, "Carrasco, Joel" <Joel.Carrasco@tetrattech.com>, "Trent Reeder"  
bcc

Subject RE: Drainage drawing

History:  This message has been replied to.

Hello David,

This request forwarded by Kathy is the conceptual drawing that you and I have been discussing for a few months now.

The request is to supplement the *Preliminary Stormwater Control and Reclamation Summary* with a conceptual sketch of where the elements described in the text would be placed on each alternative map. This is consistent with the data requests filed by the Forest Service this year.

Specifically, it would be for the following alternatives (i.e. Phased Tailings is considered complete):

- MPO-
- Upper Barrel- (once the final design is confirmed)
- Scholefield- (once final design is confirmed)

Additionally, SWCA would like to request that the Phased Tailings Contour data and associated layers be uploaded to the FTP site, as well.

I would be glad to discuss this on the phone with you, Ashley or Joel. And I want to extend a thank you for the recent call inquiry.

Thank you!  
Marcie

**From:** Kathy Arnold [mailto:karnold@rosemontcopper.com]  
**Sent:** Wednesday, May 19, 2010 2:46 PM  
**To:** David Krizek  
**Cc:** Marcie Bidwell; Debby Kriegel  
**Subject:** Drainage drawing

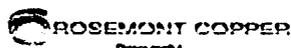
David -

I need you to put pen to paper on a drawing (2-d is fine) to show Marcie what your write-up will (could?) look like in the real world. Hand drawn arrows will be fine.

Cheers!

Kathy

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



Rosemont Copper Company  
P.O. Box 35130 | Tucson, AZ 85740-5130  
3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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"Melissa Reichard"  
<mreichard@swca.com>  
02/03/2010 12:31 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont electronic files

Debby-

Lara has been compiling them for some time now. Rosemont collected their consultants' GIS files and is releasing them on a per request basis. All requests are currently running through Lara and Kathy. We were just asked yesterday to upload what we have to WebEx and we are working on it. I will keep you posted.

Thanks!

*Melissa*

*"In every one of us there are two ruling principles, whose guidance we follow wherever they may lead; the one being an innate desire of pleasure; the other, an acquired judgement which aspires after excellence." ~ Socrates*

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, February 03, 2010 12:22 PM  
**To:** Melissa Reichard  
**Subject:** Rosemont electronic files

Hi Melissa,

What is the status of getting electronic files (maps, GIS data, topo, etc.) from USFS, SWCA, M3, Tetra Tech, Pima Co, etc. for everyone to access? I know that you and Tom were working on this in November and/or December, with a tentative completion date at the end of Dec.

Are you still collecting things? Is the data collected so far already posted on WebEx?

Thanks.

Debby



**Kathy Arnold**  
<[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>  
m>

03/08/2010 09:11 AM

To **Marcie Bidwell** <[mbidwell@swca.com](mailto:mbidwell@swca.com)>, **Debby Kriegel**  
<[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc **Stu Bengson** <[sbengson@aol.com](mailto:sbengson@aol.com)>

bcc

Subject **Stu Bengson**

Ladies -

If you have questions regarding plants and trees and growth – Stu Bengson is available for consultation. His email is [sbengson@aol.com](mailto:sbengson@aol.com). Please just keep me in the loop as to the amount of involvement he has so that I will be aware of any charges he may have.

Stu please bill directly to me – this is part of that PO that Scott issued for you last week.

Thanks -

Kathy

**Katherine Ann Arnold, P.E.** | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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"Dale Ortman PE"  
<daleortmanpe@live.com>  
05/03/2010 08:09 AM

To ""Debby Kriegel"" <dkriegel@fs.fed.us>  
cc ""Beverley A Everson"" <beverson@fs.fed.us>, ""Jonathan Rigg"" <jrigg@swca.com>, ""Marcie Bidwell"" <mbidwell@swca.com>, ""Melissa Reichard""  
bcc

Subject RE: Review Comments for Rosemont Landform Report

Debby,

1. Horst indicates that in his opinion the difference between the volume in his conceptual layout and the target volume can be accommodated during later design. This difference is not germane to the pending decision whether or not to include landforming as an alternative.
2. Marcie's comments are incorporated in the compiled comments.
3. We've requested Horst to give us his professional opinion and he has expressed that opinion in his report; however I will query Horst as to whether or not he wants to retain the ending statement in his report.

Dale

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, May 03, 2010 7:46 AM  
**To:** Dale Ortman PE  
**Cc:** 'Beverley A Everson'; 'Jonathan Rigg'; 'Marcie Bidwell'; 'Melissa Reichard'; Melinda D Roth; Salek Shafiqullah - USFS ; 'Tom Furgason'; Debby Kriegel  
**Subject:** Re: Review Comments for Rosemont Landform Report

Dale:

3 major comments:

1. Is Horst not required to provide a design that accommodates the full 1.2 billion cubic yards??
2. Did you receive Marcie's comments. I don't see hardly any of them incorporated here. Or did many of her comments fall into the categories you mention in your email below?
3. Horst needs to delete at least the last sentence (or the last whole paragraph) in his summary on page 30. Ending the report with a statement of hopelessness is not acceptable (nor do I think this is what Horst meant), and these questions did not arise during the design process...they arose at the very end. Horst could simply reference the separate document addressing these issues here.

Thanks.

Debby

"Dale Ortman PE"  
<daleortmanpe@live.com>

05/02/2010 12:19

To ""Beverley A Everson"" <beverson@fs.fed.us>, ""Melinda D Roth"" <mroth@fs.fed.us>, ""Debby Kriegel"" <dkriegel@fs.fed.us>, ""Salek Shafiqullah - USFS "" <sshafiqullah@fs.fed.us>, ""Tom Furgason"" <tfurgason@swca.com>, ""Jonathan Rigg"" <jrigg@swca.com>, ""Melissa Reichard""

PM

<mreichard@swca.com>, "Marcie Bidwell" <mbidwell@swca.com>  
cc  
Subject: Review Comments for Rosemont Landform Report  
t

All,

Attached is a memorandum containing a compilation of the pertinent review comments regarding the landform report. Not all comments received are included in the memorandum as those that altered Horst's professional opinion, modified the constraints imposed by Rosemont, or did not substantively add to the understanding of the report were omitted.

I will be forwarding the comments to Horst on Tuesday, therefore if you have any questions regarding the comments please contact me.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623



"Tom Furgason"  
<tfurgason@swca.com>  
02/12/2010 03:15 PM

To "Dale Ortman PE" <daleortmanpe@live.com>  
cc <dkriegel@fs.fed.us>  
bcc  
Subject FW: ROSEMONT PROPOSAL FOR REVISED SOW AS OF  
JANUARY 2010.doc

FYI- Horst should be good to go. I dropped the attachments.

Tom

**From:** Tom Furgason  
**Sent:** Friday, February 12, 2010 3:15 PM  
**To:** 'Horst'  
**Subject:** FW: ROSEMONT PROPOSAL FOR REVISED SOW AS OF JANUARY 2010.doc

Horst,

We will contract this task as a fixed fee. I'm sorry about the miscommunication and we can discuss my intentions when we meet later on. For the moment, it is more important that you have a Notice to Proceed and contract.

Per your request, I modified the SOW to include the language that I suggested. You will find this information under your assumptions. Your revised SOW and change order is attached and you are authorized to proceed.

Tom

Tom,

can you please add the new addition (which is acceptable) to my SOW which you have and get the NOP issued today.

**However, you told me previously that this could not be a time and material based contract but you wanted a fixed price one. Time and material would be based on hourly rates, etc, etc. and we have not ever discussed it from this perspective. So could you clarify what your intentions are??**

I am currently on the road for another project and can't make the changes. I don't want to lose any more time and would like to get started this weekend.

Thanks,

Horst

-----Original Message-----

**From:** Tom Furgason  
**Sent:** Feb 12, 2010 9:53 AM  
**To:** Horst  
**Cc:** Dale Ortman PE , Donna Morey  
**Subject:** Notice to Proceed

Horst,

I have received verbal approval from Rosemont authorizing me to provide you with a Notice to Proceed with the work detailed in the attached SOW with the following addition.

**"The nature of the work to be completed should be considered unique and applicable only to the "Upper Barrel" Alternative. This work is not intended to be applied to any other of the alternatives. Work on additional alternatives would require a revised Scope of Work and cost estimate."**

If this addition is acceptable, then please revise your Scope of Work accordingly and send it to me. I will then send you a formal contract modification for your signature. The Not-to-Exceed fee, to be billed on and Time and Materials basis, is \$39,500. It is my understanding that your work will commence next Monday (February 15) and will be completed by March 8, 2010. I appreciate your patience and flexibility in working on this project. As always, feel free to call me or Dale Ortman if you have any questions or concerns.

**Tom Furgason**

Office Director  
SWCA Environmental Consultants  
343 West Franklin Street  
Tucson, AZ 85701  
(520) 325-9194 ext. 110  
(520) 820-5178 mobile  
(520) 325-2033 fax

Debby Kriegel/R3/USDAFS  
08/03/2010 06:24 AM

To "Terry Chute" <tjchute@msn.com>, Robert Lefevre/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Re: Fw: Revegetation for Rosemont DEIS - specifically what are we including in the alternatives and mitigation?

I recommend that we include planting trees as mitigation in the EIS. Unfortunately, the tight DEIS schedule and Rosemont's continued dawdling (we've been asking them since at least January to fund someone to develop recommendations for tree planting) mean that this mitigation measure won't show up in the DEIS.

Volunteer trees will grow, but will take 100 years to mature (according to Bob's chart). In my opinion, waiting for volunteer trees is not acceptable mitigation.

I'm going to sound like a broken record, but...

The trees, landforming, and treating the white pit rock to age/darken it are the top 3 mitigation measures for visual resources. We know about these mitigation measures and need all 3 to reduce effects (for visual quality and numerous other resources).

How can we explain to the public that we intend to pursue all of these prior to the FEIS, but that they're not in the DEIS? To simply rip them out of the DEIS is not responsible, not being transparent and open with the public, and not showing that we care about resources.

"Terry Chute" <tjchute@msn.com>



"Terry Chute"  
<tjchute@msn.com>  
08/02/2010 06:32 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject Fw: Revegetation for Rosemont DEIS - specifically what are we including in the alternatives and mitigation?

Debby - you on board with where Bob is at??

**From:** Robert Lefevre

**Sent:** Monday, August 02, 2010 2:51 PM

**To:** Beverley A Everson

**Cc:** Debby Kriegel ; Jonathan Rigg ; Melinda D Roth ; Tom Furgason ; Terry Chute

**Subject:** Re: Revegetation for Rosemont DEIS - specifically what are we including in the alternatives and mitigation?

The seed mix they propose to use includes native grasses and at least one native shrub, so I don't think we have to drop shrubs from the discussion. Trees (except volunteers), however should be dropped from the mitigation table and the chapter 3 soils and reclamation section if the current plans for reclamation do not include tree planting. The tables in the chapter 3 soils and reclamation section indicate that some trees and shrubs will "volunteer" even if not planted, particularly mesquite. At the highest elevations of the reclamation effort some junipers may also volunteer, and along the water diversion channels mesquites, and possibly cottonwoods and willows will volunteer.

The modeling Marcy did for the visual effects shows some trees and shrubs and there should probably be fewer shown if no trees are scheduled for planting. At this stage of the process, I would say that we should not go back and re-do the modeling unless its really quick and easy, but be sure it is understood that everything in the simulations that looks like a small tree or a shrub is going to be a shrub or volunteer tree.

Robert E. Lefevre  
Forestry and Watershed Program Manager  
Coronado National Forest  
USDA Forest Service  
520-388-8373

Beverley A  
Everson/R3/USDAFS  
08/02/2010 11:25 AM  
To "Terry Chute" <tjchute@msn.com>  
cc "Debby Kriegel" <dkriegel@fs.fed.us>, "Jonathan Rigg" <jrigg@swca.com>, "Melinda D Roth" <mroth@fs.fed.us>, "Bob Lefevre" <rlefevre@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>  
Subj Re: Revegetation for Rosemont DEIS - specifically what are we including in the alternatives and ect mitigation?[Link](#)

I would say that if we don't have time to incorporate the mitigation into the DEIS, such as doing the research to determine the feasibility of revegetating with trees and shrubs, then it will have to be put on hold for the EIS and omitted from the mitigation table for the time being.

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

"Terry Chute"  
<tjchute@msn.com>  
08/02/2010 10:32  
AM  
To "Beverley A Everson" <beverson@fs.fed.us>, "Melinda D Roth" <mroth@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Jonathan Rigg" <jrigg@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Bob Lefevre" <rlefevre@fs.fed.us>  
cc  
Subj Revegetation for Rosemont DEIS - specifically what are we including in the alternatives and mitigation?  
ect

In her edits to the Mitigation Table, Debby pointed out that many of them say things about re-vegetation that are not currently included in the DEIS, and are not being addressed in the effects analysis. Specifically - planting trees, shrubs and container plants (as opposed to seeding); requiring the use of plant species and distributions that exist in the surrounding landscape, etc.

We need to figure out exactly what we are proposing for re-vegetation in the DEIS. Any ideas how to come to a common understanding in the next couple days???

Debby Kriegel/R3/USDAFS  
02/12/2010 10:03 AM

To karnold@rosemontcopper.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc

Subject Fw: Information Request

History:  This message has been forwarded.

Kathy,

This is the list that we discussed on Jan 29. Any progress?

Thanks.

Debby Kriegel  
388-8427

— Forwarded by Debby Kriegel/R3/USDAFS on 02/12/2010 09:58 AM —



Melinda D Roth/R3/USDAFS  
01/08/2010 12:25 PM

To karnold@rosemontcopper.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES, Melinda D  
Roth/R3/USDAFS@FSNOTES  
Subject Information Request



20100107\_kreigel\_request.docx

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

To: Kathy Arnold, Rosemont Copper  
From: Debby Kriegel, Coronado National Forest, 388-8427  
Date: January 7, 2010  
Re: Information Request

The following information will be needed for visual quality and recreation analysis. Please call me if you have questions.

1. GIS layers for the new alternatives (revised Phased Tailings, and Barrel Only) with Z-values assigned to the contours and georeferences to their locations.
2. 3D model of the plant facilities and infrastructure locations (powerline, waterline easement, etc), with detail to the point that USFS and Rosemont can agree is sufficient for simulations. These need to be georeferenced as well.
4. Information on which plant buildings and facilities cannot be painted earthtones.
5. Contours: the best resolution of the existing landform topography that Tetra Tech has. Currently SWCA is currently working off of 10m DEMs.
6. Details about what mitigation lands and/or conservation easements would be offered by Rosemont (plat maps, easement language, and timeline).
7. Map or GIS point for Sentinal Peak (and recommendations for possible spur trail location, if available)
8. Information about the appearance of the outermost waste rock (sometimes referred to as "growth medium" or "topsoil") and visible back parts of the pit. This data will be necessary for both analysis of visual resources and for creating accurate simulations. Information needed:
  - The color range of the rock types that will comprise the outermost waste rock. This could be as simple as providing samples of the rock, identifying field sites where the material can be viewed (such as on the test plots), and photographs.
  - Desert varnish (Permeon and/or Natura) tests to determine application rates for the back of the pit, and outermost waste rock if it will be lighter than surrounding landscape colors. Representatives from both companies are in the Tucson area periodically. If Rosemont could provide locations to test the correct rock types (which should be newly excavated rock, not weathered locations), they are willing to travel to the site to test various application rates. The test areas do not need to be on test plots, and could be located on National Forest land if the rock type is correct.
  - Post-mine options for breaking up the uppermost horizontal benches in the back of the pit, or if this is not possible, a description of what natural failing might be expected over time. Depending on alternative, up to 20 benches would be visible from travelways, including Highway 83.
9. A study of establishing trees and shrubs on reclaimed slopes. The current research on seeding is an excellent start, but reclamation should also include trees and shrubs (and possibly cacti) in order to more quickly stabilize the slopes and meet visual quality goals. Coordination with U of A's Dr. Fehmi would be a good place to start, and perhaps he could recommend a consultant. The study would answer the following questions:
  - Which species and sizes of plants would be most successful on the outermost material? Native plants should be selected from those currently growing at the site, and would include salvage/transplants, seedlings, and/or container plants. Patterns of plants on the new slopes should mimic those of the surrounding landscape.

- Where can the needed plants be obtained in sizes and quantities that would likely be necessary? Options include salvaging from the site, purchasing from local nurseries, contracting propagation, or some combination. Landforming work and alternative selected will affect the exact quantities, but a rough examination of existing numbers of plants and species per acre in the area would provide a good starting point,. And I know of one local plant expert with a nursery who might be available to provide information on the success of propagating species not typically sold in nurseries and/or to could help propagate plants.
- If there are different suites of native plants best adapted to different "growth mediums", a plan should be developed to place that material/plant or seed those suites of vegetation to achieve targeted reveg and biology needs. Specifically this applies to Agave/bat concerns, but also to many plant species obligates. An example of how this could go wrong inadvertently would be that if a "growth medium" which is best for Agave survival is placed on slopes which are not conducive to Agave survival (north facing, south facing, whatever), we all would have missed a huge opportunity. At a later date, this information would be used to resolve what "growth medium" goes where--for visual and plant growth needs--solves problems for the proponent and the land manager.



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/19/2009 08:48 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Schedule/Proposal

Good Morning, Debbie

Yes, you are correct that I did not send a schedule to discuss. I have received word that the Change Order does not include work on a visually sensitive alternative or visual simulations, at this time. We are trying to negotiate these services. I know we are both disappointed by this news. As I mentioned, the new direction from RC is that we must stick within our 2009 budget constraints and that is to guide our services that we are authorized to offer.

I am curious if anything was discussed at your IDT meeting yesterday regarding the alternatives and our role in the process?

I am planning on calling you at 10:00 and explain what I know and have authority to do at this moment (I am working from home this AM).

Of the scope that I assembled last fall, the first three tasks were included within the Change Order that was returned from RC. They were listed under "Technical Reports" for less than half of our proposed budget:

1. Visual/Remediation Meeting, Remediation Field Trip
2. Collect, Analyse, and Summarize Design Information
3. Identify Design Evaluation Criteria

The following tasks from your email would still be included as part of the EIS and on the regular EIS schedule:

- Research and familiarity with Forest Plans and other documents
- Affected environment
- Environmental consequence
- Cumulative Impacts
- Irreversible Commitment of visual resources

What would not be included would be the design alternative development and additional work on that process. Tours to sites other than the project area would potentially fit within the budget constraints, but we would have to be careful and reduce the number of trips to the project area as a result to balance the issues.

I wish I had different news; I will call in the next hour to discuss this further.  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Thu 2/19/2009 8:04 AM  
**To:** Marcie Bidwell  
**Subject:** Rosemont Schedule/Proposal

**Marcie:**

I did not receive an email from you yet. Will you be sending something soon? If you send it in the next hour I can review it and we can talk at 10:00. Let me know.

Thanks.

Debby



"Stephen Leslie"  
<sleslie@swca.com>  
07/01/2010 04:29 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Jonathan Rigg" <jrigg@swca.com>, "Tom Furgason"  
<tfurgason@swca.com>  
bcc

Subject Recreation Affected Environment

History:  This message has been replied to.

Debby -

I have incorporated all of your changes and updated information to address your additional comments and requests from your email last week.

The maps are done, just haven't inserted them into the text. I'll be out of the office tomorrow, but can answer any additional questions next week.

Thanks,  
Steve



Ch\_3\_Recreation\_and\_Wilderness\_070110\_Kriegel\_review\_SDL.doc



"Marcie Bidwell"  
<mbidwell@swca.com>  
03/17/2009 05:33 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Charles Coyle"  
<ccoyle@swca.com>  
cc "Tom Furgason" <tfurgason@swca.com>  
bcc  
Subject Visuals process~ a combination of SWCA Scope, EIS  
Process, and design exploration

Hello Debby,

Here is the combined table that you and I worked on today.

For Charles and Tom's sake, the attached table probably needs some explanation to place it in context. Debby has asked that USFS and SWCA work together to place the elements of the EIS, the scope that SWCA is currently working under, and her ideal process into one chronological (if possible) timeframe or visual schedule.

She and I drafted the attached doc that combines her list of action items, the standard EIS AE/EC process, Visual Technical Report, and the design process that would be typical of a landscape architect's approach to evaluating the proposals. The **far RIGHT Columns identify, what is included in the scope and what is outside of the scope (Y/N).**

Also, we attempted to guess a timeframe for the EIS process, but we totally understand that a schedule for the entire process is still evolving. Just using these dates a benchmark.

We are sending it out to you for comments and to keep you informed of how the visual process is evolving. Debby's intent is that the design elements and simulations should be included in SWCA's scope; she would like for SWCA to develop a method to explain those pieces to RCC and their context. This is that attempt to place the elements in the greater process.

Feedback and questions are encouraged,  
Marcie

<<Visual\_Resource\_Proposal\_2009-03-17.xls>>

Marcie Demmy Bidwell  
Environmental Planner  
515 East College Avenue  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual\_Resource\_Proposal\_2009-03-17.xls

**Rosemont EIS - Proposal for Visual Resource Analysis (3/14/09)**

Note: This document summarizes the basic steps and tasks, responsibilities, and schedule. Information provided in other emails and letters still applies

| Task      | Description of Work                                                                                                                                                                                                                                                                                                            | SWCA responsibilities                                                                                                                                                                                              | USFS responsibilities                                                                                        | Proposed Completion Date                                 | Associated EIS Timeline Step & Date                 | Status              |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------|---------------------|
| <b>1</b>  | <b>PROJECT PREPARATION</b>                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                    |                                                                                                              |                                                          |                                                     |                     |
| <b>1a</b> | Review PIL, MPO, Reclamation Plan, public comments, Forest Plan, VQOs, SMS inventory, FS SMS Handbook, USFS Project Level Scenery Analysis, FSM 2380, Corridor Mgmt Plan for Patagonia-Sonoita Scenic Rd                                                                                                                       | Review all documents and utilize as appropriate throughout analysis                                                                                                                                                | Provide documents as needed                                                                                  | 3/20/2009                                                | Spring 2009                                         | Complete/ On-going  |
| <b>1b</b> | USFS/SWCA create this proposal and schedule; Present to USFS Project Manager and Process Manager, RCC and SWCA Project Manager                                                                                                                                                                                                 | Review and comment. Coordinate with Rosemont as needed.                                                                                                                                                            | Provide draft and final                                                                                      | Drafted 3/20/2009; Mgmt App by 3/27/2009                 |                                                     | Underway            |
| <b>1c</b> | Provide outlines for EIS and technical report                                                                                                                                                                                                                                                                                  | Draft for chapter 3 and technical report provided 3/12/09                                                                                                                                                          | Requested Word documents 3/13/09. Review and comment.                                                        | 3/16/2009                                                | 3/16/2009                                           | Completed 3/16/2009 |
| <b>1d</b> | Obtain simulations being completed by Rosemont                                                                                                                                                                                                                                                                                 | SWCA to request if studies and simulations are being supplied by RCC for USFS, and obtain documents as appropriate. SWCA to assist USFS to determine whether they are sufficient to complete visual analysis work. | USFS to review and comment re: suitable to meet USFS analysis needs.                                         | Request by 3/23/2009                                     | 3/30/2009 (?)                                       |                     |
| <b>1e</b> | Complete issue statements                                                                                                                                                                                                                                                                                                      | Draft provided                                                                                                                                                                                                     | Review and comment                                                                                           | March?                                                   | Issue Statements (March 2009?)<br><i>Unassigned</i> | Underway            |
| <b>1f</b> | Research other reclamation efforts that protected scenery on other mines. Contact reclamation experts who have successfully completed land sculpting on other large-scale mines and good revegetation efforts. Identify what was successful and could be incorporated into the Rosemont project. Identify mine sites to visit. | Complete research and provide findings. Travel to other mine sites as needed.                                                                                                                                      | Review all research (Note: <i>Dkriegel has made some contacts; SWCA needs to take the lead immediately</i> ) | Define- 3/20/2009; Initiate research schedule- 3/20/2009 |                                                     |                     |
| <b>1g</b> | Summarize remediation case studies and research into a chapter of the Technical Report. Use research to inform evaluation criteria for analysis.                                                                                                                                                                               | Provide draft and final of remediation case studies for Technical Report                                                                                                                                           | Review and comment                                                                                           |                                                          | <i>Unassigned</i>                                   |                     |
| <b>1h</b> | Identify evaluation criteria that will be used to describe affected environment, define environmental consequences, and evaluate project effects.                                                                                                                                                                              | Provide draft and final                                                                                                                                                                                            | Review and comment                                                                                           |                                                          | Y                                                   |                     |
| <b>2</b>  | <b>AFFECTED ENVIRONMENT</b>                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                    |                                                                                                              |                                                          |                                                     |                     |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                        |                                                                   |              |                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------|--------------|-----------------------------|
| 2a                          | Identify visually sensitive travelways and viewpoints, and special places in and around the project area. Document key observation points for the affected environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Provide draft and final                                | Review and comment                                                | 15-May-09    | Spring 2009                 |
| 2b                          | Map viewsheds that would be affected by the project, both for the no action alternative and the proposed action (including pit, waste rock piles, plant, utility lines, new roads, etc.).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Provide maps                                           | Review maps                                                       | May 15, 2009 | Spring 2009                 |
| 2c                          | Identify and describe scales of analysis, which are likely to include the viewshed that includes the proposed mine, the Santa Rita Mountains EMA, and landscapes across the Coronado National Forest. Provide a brief analysis of large-scale natural landscapes across southeastern Arizona to demonstrate the value of the Coronado NF and the project area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Provide maps and written documentation                 | Review all items                                                  | 1-Jul-09     | Summer 2009                 |
| 3f                          | Write the Affected Environment section (technical report and/or chapter 3 text). Explain the existing directives for visual resources (FSH, Forest Plan direction, VQOs, etc.). Describe the existing landforms, vegetation, line/form/color/texture, land uses, and deviations from the landscape. Identify the valued landscape character to provide guidance for analysis of alternatives. Describe visitors and visually sensitive travelways and viewpoints and distance zones. Describe current impacts to visual resources at each analysis scale. Utilize the Visual Resource Management System (and VQOs) currently in the Forest Plan, but prepare a parallel report using the Scenery Management System. If the Forest Plan is revised prior to completion of the EIS, it is likely that SMS will be incorporated, and would therefore be the system used in the Rosemont EIS. | Provide draft and final                                | Review and comment                                                | 1-Sep-09     | Chapter 3 (September 2009?) |
| <b>3 DESIGN EXPLORATION</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                        |                                                                   |              |                             |
| 3a                          | Identify alternate locations to potentially place waste rock and tailings (unseen or seldom seen locations with few wildlife and archaeology concerns). A McHarg-like mapping process might work well.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Provide maps. Site visits as needed.                   | Provide wildlife and archaeology data as needed and review maps   |              | Unassigned                  |
| 3b                          | Create a 3-D computer simulation of existing landscape and proposed mine.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Provide simulation                                     | Review simulation                                                 |              | Unassigned                  |
| 3c                          | Explore alternative placement and shaping of waste rock and tailings piles that better protects and mimics natural landforms and landscape character. Explore radically different shaping to avoid the monolithic form, flat top, and even side slopes. Consider options that may benefit wildlife habitat and those that might mitigate impacts of the pit (such as removing the most visible western edge). If 3-D computer modeling is not sufficient to complete this step, utilize other methods such as a topographic model.                                                                                                                                                                                                                                                                                                                                                        | Provide ideas to IDT during discussion of alternatives | Review and advise. Participate in 3-D computer modeling sessions. |              | Alternative Development     |

| 3d        | Select tentative key viewpoints for simulations. Document these locations with photography and GPS. Prepare "before" images.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Provide draft and final. Site visits as needed. | Review and comment | Unassigned                  |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------|-----------------------------|
| <b>4</b>  | <b>ENVIRONMENTAL CONSEQUENCES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 |                    |                             |
| <b>4a</b> | Complete a full analysis of the 3 big impacts: the waste rock and tailings piles, the pit, and the "temporary" facilities (plant, roads, utilities, etc. that would only be on site during mining) for all alternatives (no action, proposed action, preferred action, and others). Include written documentation, 3-D simulations, and static viewpoints (showing before and after views). Determine and describe recommended mitigation. If necessary, provide language for an amendment to the Forest Plan. Utilize the Visual Resource Management System (and VQOs) currently in the Forest Plan, but prepare a parallel report using the Scenery Management System. | Provide draft and final                         | Review and comment | Chapter 4 (September 2009?) |
| <b>4b</b> | Write Technical Report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Provide draft and final                         | Review and comment | Draft EIS (September 2009?) |
| <b>4c</b> | Complete a thorough Cumulative Effects analysis and summarize in the Technical Report. Analyze past, present, and future land uses and impacts across natural public landscapes in SE Arizona and how the proposed action, when added to them, effects visual resources at each analysis scale.                                                                                                                                                                                                                                                                                                                                                                          | Provide draft and final                         | Review and comment | Draft EIS (September 2009?) |
| <b>4d</b> | Summarize Technical Report for EIS Chap 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide draft and final                         | Review and comment | Draft EIS (September 2009?) |

| Within Current Contract | Notes                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                         |                                                                                                                                    |
|                         | Regional LA may be consulted to approve of process                                                                                 |
|                         |                                                                                                                                    |
|                         |                                                                                                                                    |
| Y                       |                                                                                                                                    |
| N                       | USFS and SWCA need to define what is the required process for reclamation research in the EIS process and at what timing/schedule. |
| N                       |                                                                                                                                    |
| Y                       |                                                                                                                                    |

|   |   |   |   |  |   |   |   |
|---|---|---|---|--|---|---|---|
|   |   |   |   |  |   |   |   |
| Y | Y | Y | Y |  | Z | Z | Z |

|   |   |   |   |   |
|---|---|---|---|---|
|   |   |   |   |   |
| N | Y | Y | Y | Y |



"Stephen Leslie"  
<sleslie@swca.com>  
02/03/2010 09:53 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont - OHV Proposal

Thanks Debby – I'll give you a call after I've had a chance to go through this.

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, February 03, 2010 6:39 AM  
**To:** Stephen Leslie  
**Subject:** Rosemont - OHV Proposal

Steve,

Here is Art's idea. In the recreation scope of work I gave you on Nov. 10, task #3, bullet 1 includes my recommendations for how you can help explore the idea. Let's discuss further after you've reviewed this and given it a little thought.

Thanks.

-----  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

----- Forwarded by Debby Kriegel/R3/USDAFS on 02/03/2010 07:34 AM -----

Arthur S Elek/R3/USDAFS

02/02/2010 04:12 PM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc  
Subject OHV

ART ELEK  
Fire Prevention Officer

**Nogales Ranger District  
303 Old Tucson Road  
Nogales AZ. 85621  
Office: (520) 761-6010  
Cell: (520) 975-7814  
Fax: (520) 281-2396  
e-mail [aelek@fs.fed.us](mailto:aelek@fs.fed.us)**



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/28/2010 03:33 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Mt Wrightson KOP from TT

Debby,

Agreed to all below.

This is MPO at YR 20, so the top will have 10-13 yrs growth by this time, depending on where on the pile it is.

one way to envision it is to think of bath tub rings for each lift that they build and reseed. However, the Reclamation Plan is slightly more complicated than that in that the phasing is not quite that linear. But the concept still works.

We did include some drainage swales with rip rap, some small drainage benches, and even a few failures if you look closely at the image.

Sprinkling is the right term, for sure, and at this view, there is not much shaping/aspect to be seen or respond to, almost all east facing- we are looking at the sides of the hot dog from this angle.

Call if you get back to the office today~  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, January 27, 2010 1:00 PM  
**To:** Marcie Bidwell  
**Subject:** RE: Mt Wrightson KOP from TT

I'm ok with "sprinkling" some veg, but...

1. Volunteer trees will grow very, very slowly. Even seeding and seedlings will grow very, very slowly. Will shrubs and shrub-sized trees be visible from this distance?
2. The veg pattern will depend on landforms. Is this simulation for the MPO? 3:1 even side slopes? Not much will grow well, so veg scattering would be rather diffuse. For the phased tailings alternative with horizontal benches, lots of stuff will grow on the benches, creating strong visual veg lines.
3. You're showing the final buttress, right? Did you say it gets completed in year 7, but you're using topo for year 10 (because that's all we have)? Do we assume that veg growth (voluntary or seeded/planted) starts at year 7, but the topo is year 10, so there'd be 3 years of veg growth if this sim is year 10? Are you also planning to simulate a later date?

I'm in the office now, so feel free to call to discuss this and other stuff.

"Marcie Bidwell" <mbidwell@swca.com>

01/27/2010 08:22 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject RE: Mt Wrightson KOP from TT

We were, but like you said it can make it into the FEIS

Here is an image of our first basic shot at MM44- not perfect, but showing veg at 10yrs (20 YR build out). We are still working on the pit, and need the study/information that you requested from RCC as to colors, textures.

What do you think of sprinkling some trees in a volunteer pattern? I will call to discuss

I need to get feedback on what to show on these for the reveg and at what years.

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, January 27, 2010 8:07 AM  
**To:** Marcie Bidwell  
**Subject:** Re: Mt Wrightson KOP from TT

Wow, I agree. This is not good.

There is currently lots of snow in upper elevations of the Santa Ritas, and the trails are probably unhikable (or very difficult to hike) for the next couple of months. Therefore this KOP won't make it into the DEIS. If there is an opportunity to get a better photo in late spring, let's pursue it then. Were you planning to do a simulation from this point?

"Marcie Bidwell" <mbidwell@swca.com>

01/25/2010 05:02 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tom Furgason" <tfurgason@swca.com>  
Subject Mt Wrightson KOP from TT

Hello Debby,

Please find the Mt. Wrightson KOP photograph from TT attached.

In review of TT's photo , its limited in field of view (scope- only one frame), low resolution, and really hazy sun. It also might be zoomed in.

If we need to retake this photo, it will need to be well planned, as its a long hike in and it should ideally be shot in the morning, preferably before 11 on a clear day, so someone has to plan ahead.

I look forward to your feedback.

Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
06/10/2010 09:17 AM

To mbidwell@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc

Subject Rosemont - items for Project Record

History:  This message has been forwarded.

Marcie,

When you met with Jamie Sturgess earlier this year, did you write up some notes to summarize what was discussed and what he agreed to? If so, would you please put that information in the project record?

Also, when you get a minute, please let me know what you've been making progress on.

Thanks!

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Debby Kriegel/R3/USDAFS  
02/23/2010 07:18 AM

To Kathy Arnold <karnold@rosemontcopper.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Re: FW: Mitigation Table - Debby's questions for Rosemont  


History:  This message has been forwarded.

Kathy,

Dale Ortman and I have been discussing what might be possible for breaking up the uppermost horizontal benches in the pit. I am now well aware that it's not possible to remove the benches (or any significant portion of them), but he has suggested a couple of possible options: double benching or randomized benches. He mentioned that the latter is not a standard industry method, but may be applicable in the upper part of the pit wall scarp. For now, I'd like to add a little wording to one of the mitigation measures to capture the concept. Please let me know if this is acceptable.

Mitigation measure #15.3.3/238:

- Treat upper portions of the pit wall that are visible from Highway 83, the Arizona Trail, and other Concern Level 1 travelways and residential areas within 5 miles of the pit by (1) reducing the visual impact of horizontal safety benches by reducing the number of benches (double benching), placing benches in a randomized pattern, or similar, and (2) applying Permeon or similar to darken rock to match weathered rock on the ridge at the conclusion of operations. Verify that selected treatment will not create water quality problems. Review treatment at least every 5 years and adjust as needed to protect visual quality. If possible, plant vegetation on broken ledges on visible parts of pit wall.

Thanks.

Debby

## Task 5.2.Issue 2—Visual Resources

### Subtask A. Affected Environment Update for 6 Alternatives and Connected Actions

- Update affected environment to incorporate alternatives, for specialist report and EIS.
- Collect KOP in Tucson area with GPS and photography.
- Update basic existing conditions maps to show key observation points (KOPs), sensitive viewer areas, bounds of analysis, concern levels, and scenic objective classes.

### Subtask B. Prepare Alternatives Data: Convert CAD and Construct 3D GIS Surface

- Process CAD data and model data for GIS digital elevation modeling. Generate 3-D digital surfaces for the MPO and proposed alternatives at each construction phase selected for simulations.
- Create one set of 3-D working maps and diagrams for USFS and RCC to review potential scene from each KOP to be selected.
- Budget Assumptions: 12 data sets to process each alternative at 20-yr Phase and one additional time phase mid-construction.

### Subtask C. Prepare KOPs, Existing Conditions, Panoramas, and Visibility Maps

- Review all alternatives and KOPs established by the USFS and KOPs to propose to USFS for analysis, simulations, and level of detail for connected actions to define areas where impacts from the project is expected to be highly visible, distantly visible, and not visible (i.e. blocked or out of view)
- Prepare "existing conditions" panoramas for potential KOP simulations and review for use as simulations. For KOPs where project would be visible, select a phase to represent for each KOP in addition to Reclamation (i.e. construction at 5 years, etc.).
- Meet with USFS and RCC to review data, KOP selection and "photo realistic" process (1-2 meetings) includes meeting preparations, meetings, and meeting summaries. Review draft simulations with specialists from USFS, SWCA, and RCC to direct specific aspects of renderings (soils, reveg, etc.)
- Budget Assumptions: 8 KOPs 20-yr Phase and additional Phase for 6 KOPs

### Subtask D. Draft Specialist Report Analysis Methodology and Evaluation Criteria

- Draft analysis methods and evaluation criteria that will be used to define and evaluate project effects for the project resources included in the study for all alternatives and KOPs.

### **Subtask E. Draft Visibility Diagrams and Simulations; Review with USFS/RCC**

- Create computer simulations of proposed alternatives (6 total action alternatives) for selected KOPs for highly visible, moderately visible, and distantly visible locations. Highly visible and moderately visible KOPs simulations will show 2 phases of the proposed alternatives for each KOP (e.g. TBD construction phase and 20-yr final reclamation). Each simulation will show waste rock and tailing pile forms, pit, roads, stormwater, vegetation, and infrastructure.
- For KOPs where the MPO and proposed alternatives would not be visible, prepare a section diagram or labeled panorama showing key landscape features and visual screen.
- Prepare photorealistic simulation images for KOPs.
- Review draft simulations with resources specialist from RCC, USFS, and SWCA to direct specific aspects of renderings; reclamation, soils, vegetation, etc.
- Complete a Draft review with USFS and RCC staff at meeting in Tucson.

### **Subtask F. Prepare Environmental Consequences Analysis**

- Prepare an environmental consequences analysis for Specialist Report. Report will include analysis of direct, indirect, and cumulative effects, and compare alternatives. Utilize direction from FSM/FSH and USFS Project Level Scenery Analysis. Deliverables: Completed Visual Resources Specialist Report for all alternatives including draft simulations, visibility diagrams, and maps.

### **Subtask G. Finalize Diagrams and Simulations; Review with USFS/RCC**

- Complete changes to simulations.
- Submit final formatted figures (e.g. panoramas, diagrams, simulations) to USFS and RCC for final approval.
- Budget Assumptions: Diagrams and Simulations will focus on land forms and will include 1 final review with USFS and RCC.

### **Subtask H. Final Specialist Report.**

- Finalize Specialist Report and review with USFS.
- As needed, provide text for EIS.

### **Assumptions:**

- Costs are based upon deliverables for each proposal according to the number of KOPs brought forward for simulations and figure diagrams. All alternatives will describe up to 24 KOPs for the analysis process. Revised USFS and USFS original budgets include up to 8 panoramas, non-visible KOPs diagrams for up to 6 KOPs, and simulations of highly visible and moderately visible KOPs for 8 KOPs for each of 6 proposed alternatives (up to 48 simulations) at 20-yr final reclamation and up to 6 KOPs for a construction phase per alternative (36 simulations). However, not

all KOPs will require simulations for all alternatives (i.e. Sycamore canyon will not be visible from many of the KOPs along SR 83). KOPs and level of detail for simulations will be formalized at the initial simulation meeting; however costs are assumed based upon the list of KOPs provided by the USFS Simulation Strategy.

- RCC to provide all data and elevations required for simulations, including a 3D model of any facilities, structures, or transmission infrastructure. USFS, RCC and SWCA will collectively contribute example imagery for depicting coloration, texture, formations, structures, and other details for portrayal in the simulations prior to simulations initiating. Surface data or changes to surface data that is provided/requested after 3D modeling is initiated will be incorporated on a time and materials basis. Direction regarding these details that is received after simulations have been initiated that varies dramatically may result in a change order. Simulations that require detailed development of the mine plant will be completed on a time and materials basis. Field work for 10 of the 14 KOPs has already been collected under the Visual Technical Report scope. SWCA assumes that Mt. Wrightson has been photographed by Rosemont's subcontractors and SWCA will be able to use this panorama for simulations. It is assumed that field documentation will be required for Box Canyon and Tucson KOPs at a minimum. Changes to the KOPs or to the construction phase selected for simulation after this meeting may require additional field work and may result in a change order. Additional KOPs, simulations, phases, or alternatives may be requested for an additional fee.
- Simulations will be classified as "highly visible" or "moderately visible". Highly visible simulations will show detailed variations in land form, vegetation, color, and texture for tailings and waste rock placement. Moderately visible simulations will show general variations in land form, vegetation, color and texture due to the level of detail being reduced by the distance of the viewer from the project area.
- Should KOPs simulations require extensive details of mining facilities, conveyors, equipment, transmission lines, etc, the work for these layers will be performed on a time and material basis, due to the unpredictable level of detail and effort required for these structures.
- Research for revegetation species and growth rates shall be provided by a separate contract funded by Rosemont. Based on findings, RCC and USFS are to agree upon the level of reclamation and vegetation success to be rendered prior to initiation of photoreal simulations. Changes in the direction given to SWCA to represent these aspects will require a change order, should they require additional time and effort to address.
- RCC will provide example photographs of existing reclamation, mining structures, vegetation mixes, soil types and colors, and other data to SWCA prior to the initiation of the simulations. Necessary imagery will be discussed at simulation meeting.
- This estimate assumes that SWCA will create 3D surfaces for MPO and proposed alternatives from RCC CAD drawings for up to 2 phases of construction. Should RCC provide GIS surfaces, these costs may be reduced accordingly.

- Changes in data, proposed action, and level of detail requested for simulations, phases of construction, and resolution of imagery after project initiation will require adjustments based upon time and materials. SWCA will submit surfaces to RCC and USFS for review prior to creation of simulations.
- Cost estimate includes two in-person meetings as two trips to Tucson for Marcie Bidwell to work with USFS and RCC on simulations, per direction of USFS staff. Additional trips may be required by USFS or RCC, and these will be arranged through an additional change order. Each task includes meeting hours for senior staff, visual specialist, editors as necessary and senior GIS under each task; additional meetings may be arranged on a time and materials basis.
- This scope of work includes one round of draft review and one round of final review for specialist report and simulations, unless review comments are extensive, in which case an additional draft review may be needed. Additional changes, reviews, or updates will require an additional change order. Ideally, review of final images will require minimal edits agreeable to both USFS and RCC for accurate portrayal of the MPO. Explorations of mitigation options (such as painting facilities alternative colors or reducing pit contrast through other than agreed-upon mitigation treatments ) would be covered under an additional scope. USFS and RCC should attempt to synchronize their comments prior to submittal to SWCA; should differences of opinion occur, SWCA will default to USFS guidance as the official SWCA client.



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/22/2010 02:57 PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>  
cc "Melissa Reichard" <mreichard@swca.com>, "Trent Reeder"  
<treeder@swca.com>  
bcc

Subject RE: Update on Visual Resouces

In discussion of the list below with Debby, here are our conclusions:

**1. TT SCOPE:** TT scope should be reviewed to see if the simulations that they are proposing are necessary and reduce the size of this scope if they have not already completed it. While as an illustration these diagrams might be useful, as an analysis tool, the multiple KOPs and multiple views are not useable in the anlysis as there is no scientific or defensible basis to the timeframe, growth of vegetation, and scale.

**2. COMBINED LIST OF KOPS:** List of KOPs to be combined is a fine principle. Marcie to do some checking to make sure that they will work.

**3. VIEWSHED ANALYSIS PRESENTATION:** Viewshed Analysis would be ok for TT to do, if they follow the right protocol. The final deliverable should be a combined KOP map showing all the KOPS used for visual analysis on one map. Color will be required unless they can find out a way to do it without the color, but the landscape color and visibility layers seem to make color necessary.

The TT scope may be reduced by only producing (1) map per alternative (8 total, instead of 46) and they can use less KOPs by only including the ones that are within the USFS *middleground* distance. I am shortening the list for them and providing the dirctions for presentation.

Thanks  
Marcie

(Melissa, please include this chain of emails in the record- thanks)

---

**From:** Marcie Bidwell  
**Sent:** Wednesday, January 20, 2010 4:42 PM  
**To:** 'Debby Kriegel'; Tom Furgason  
**Cc:** Melissa Reichard; Trent Reeder  
**Subject:** Update on Visual Resouces

Hello Debby,

I wanted to bring an update to you on visual scope, budget, and a few other details.

The meeting proposed for this week has been postponed for now, and I would like to propose a meeting next week (Thursday or Friday, Feb 28-29 or following Monday) to finalize direction on simulations (colors, textures, planting, etc) for SWCA's analysis and scope.

### 1. TT Scope

Rather than having a meeting, Rosemont and TT caught Tom and I on the phone to just go over the basics. In talking with Rosemont and Tetra Tech, I have a better understanding of what Sage and Tetra Tech has been scoped to do (summarized as the following bullets). I have encouraged TT to submit this scope to you so that you are aware of their activities and can give any guidance that would be beneficial to their project. They said that their scope includes:

- **KOP Viewshed Analysis** for up to 8 KOPs with views of disturbed ground for all 6 alternatives
- **Simulations from 2 KOPs of full vegetation growth and a mid-stage vegetation growth** (MM 46 and MM 44) (like the image in the December deliverable for the land forming tour).
- **Simulations from Overview Image** (Aerial photo or Oblique Angle) with full vegetation growth and a mid-stage vegetation growth (similar objective of showing final vegetation but from the birds-eye view).

Additionally, you may be interested in providing feedback as to the process that Sage is using for their simulations. For instance, I am not sure how full vegetation and mid-stages are being defined or what they are attempting to show. If some of the list above you do not see as useful, there may be other ways to direct this effort. Its up to you.

## 2. COMBINED LIST OF KOPs

We discussed the KOPs that the USFS had selected in June, compared them with the KOPs that TT was working with. These KOPs continue to provide the coverage for the top priority KOPs that you selected, and fill in some data gaps for the KOPs that were on the USFS list (mainly Mt. Wrightson and the AZ trail).

From this, TT and SWCA would like to propose the following "combined list" for your consideration. To reduce confusion for everyone, the following KOPs and naming conventions were recommended (also in attached excel file for better formatting):

<b>FINAL Name</b>	<b>Location</b>	<b>USFS KOP Name</b>	<b>TT KOP Name</b>
KOP 01	MM 46- Picnic Table Pull Off	KOP 4	<i>Replaces</i> KOP-3
KOP 02	MM 44- Scenic Pull Off	KOP 12	<i>Replaces</i> KOP-1
KOP 03	Arizona Trail	KOP 5	<i>Replaces</i> KOP-4
KOP 04	Mount Wrightson- Four Spring Trail		<i>Replaces</i> KOP 17 KOP-11
KOP 05	North of Sonoita Junction	KOP 8	KOP-12
KOP 06	Las Cienegas BLM Kiosk/ Empire Ranch Entry		KOP 11 (new)
KOP 07	Hilton Ranch Road rural residential area		KOP 16 (new)
KOP 08	Box Canyon Road/ Arizona Trail Crossing		(new) KOP-7
KOP 09	Sahuarita Road	KOP 20	(new)

This is just the short list. The other USFS KOPs would still be used for analysis.

Several of TT's KOPs are very similar to the USFS selected ones, and these were matched. A few fill in data gaps from USFS list (Mt. Wrightson and Box Canyon). Several of TT's KOPs would then be dropped from the list, as they were additional to the USFS ones (upslope of the pit, Gunsight,etc) unless you feel differently.

## 3. Viewshed Analysis- presentation

Tetra Tech would like some direction from the USFS on how to present the viewshed analysis to fit into the overall analysis process.

**3.1. What KOPs should they use?** We discussed that they would use the top 8 KOPs, what I am calling the "short list" from your strategy for the detailed analysis.

### **3.2. How should they present the results?**

I suggested the following options:

- Views of Disturbed Area (this is what TT diagrams show now, only views of inside the active mining area)
- Full Cone of Vision (typical presentation, one KOP per map showing the full spectrum of their view)
- Multiple KOPs overlain on one map, the "cumulative viewshed analysis" that you and I discussed last week.
- Just deliver the data, not maps, to the admin record and SWCA can map it.

### **4. SWCA Scope and Analysis- any adjustments?**

Once we have a chance to discuss these, let me know if you see any adjustments to SWCA's scope of work. I will not proceed with viewshed analysis maps, unless you feel we should still do them.

<< File: KOP Combined List.xls >>

That's it for now!!

Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/22/2009 08:05 AM

To "Marc Kaplan" <mkaplan@fs.fed.us>  
cc "Debby Kriegel" <dkriegel@fs.fed.us>, "Stephen Leslie"  
<sleslie@swca.com>, "Trent Reeder" <treeder@swca.com>  
bcc  
Subject RE: Fw: Rosemont - Updated Map of Visually Sensitive  
Travelways

Thank you Marc,

I will follow up with Debby regarding next steps for the visual analysis for Rosemont.

Do you anticipate revisions in the near term?

Please continue to send data as updates and corrections occur.

Thank you,  
Marcie

**From:** Marc Kaplan [mailto:mkaplan@fs.fed.us]  
**Sent:** Monday, September 21, 2009 2:12 PM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel; Stephen Leslie; Trent Reeder  
**Subject:** RE: Fw: Rosemont - Updated Map of Visually Sensitive Travelways

Here is the shapefile for concern levels 1 through 3 in the Santa Ritas and surrounding major roads. This file has not been cleaned of topological errors and is still being reviewed to make certain correct attributes are sticking. NAD 83 UTM 12 This shapefile is still under review, but is the most recent we have.

Thank you

Marc

Marc G. Kaplan  
Planner Analyst  
Coronado National Forest  
300 W. Congress, Tucson, AZ 85701  
520-388-8358

"Marcie Bidwell" <mbidwell@swca.com>

09/16/2009 09:39 AM

To "Marc Kaplan" <mkaplan@fs.fed.us>, "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Stephen Leslie" <sleslie@swca.com>  
Subject RE: Fw: Rosemont - Updated Map of Visually Sensitive Travelways

Marc,

Please CC [treeder@swca.com](mailto:treeder@swca.com) on Friday, as I may be away from the office.

Thank you,  
Marcie

**From:** Marc Kaplan [mailto:mkaplan@fs.fed.us]  
**Sent:** Wednesday, September 16, 2009 10:32 AM  
**To:** Debby Kriegel  
**Cc:** Marcie Bidwell; Stephen Leslie  
**Subject:** Re: Fw: Rosemont - Updated Map of Visually Sensitive Travelways

I expect to send by COB this Friday.

Thank you

Marc

Marc G. Kaplan  
Planner Analyst  
Coronado National Forest  
300 W. Congress, Tucson, AZ 85701  
520-388-8358

Debby Kriegel/R3/USDAFS

09/16/2009 07:09 AM

To Marc Kaplan/R3/USDAFS@FSNOTES  
cc  
Subject Fw: Rosemont - Updated Map of Visually Sensitive Travelways

Hi Marc,

Would you please send the GIS shapefiles for the Santa Rita Concern Level 1, 2, and 3 travelways to 2 people at SWCA?

[mbidwell@swca.com](mailto:mbidwell@swca.com)  
[sleslie@swca.com](mailto:sleslie@swca.com)

Thanks!

Debby

----- Forwarded by Debby Kriegel/R3/USDAFS on 09/16/2009 07:07 AM -----

"Marcie Bidwell" <mblidwell@swca.com>

To "Stephen Leslie" <sleslie@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>

09/15/2009 08:38 AM

cc "Trent Reeder" <treeder@swca.com>

Subject RE: Rosemont - Updated Map of Visually Sensitive Travelways

Debby,

Steve's points apply to visual as well. Visual and rec AE was submitted back in June/July.

We definitely will need the GIS layers that you used to create this map to analyse the CL's. Please forward those at your nearest convenience (or have Terry contact Trent).

Thanks,  
Marcie

**From:** Stephen Leslie

**Sent:** Tuesday, September 15, 2009 9:35 AM

**To:** Debby Kriegel; Marcie Bidwell

**Subject:** RE: Rosemont - Updated Map of Visually Sensitive Travelways

Debby,

This looks good. Just so you know, I have already submitted the initial draft affected environment for recreation. I'll keep this information handy for when we respond to any other necessary changes. Have you provided the travelways data in GIS yet? We'll need that in order to quantify miles of travelways that would be impacted by each alternative.

Thanks,  
Steve

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, September 15, 2009 8:06 AM  
**To:** Marcie Bidwell; Stephen Leslie  
**Cc:** Debby Kriegel  
**Subject:** Rosemont - Updated Map of Visually Sensitive Travelways

Attached is an updated map showing Concern Level 1, 2, and 3 travelways for the Santa Rita Mountains. Our original CL map was 10 years old. The Rosemont project inspired me to review this map, discuss it with our district field person, and make a few changes.

CL1 travelways are most sensitive. CL2 are moderately sensitive. CL3 are least sensitive.

Marcie: Please use this as you write the affected environment section for visual quality. I also sent this map to Jimmy Pepper.

Steve: CL1 roads and trails are our most popular recreation routes. This should be useful as you write affected environment for recreation, and possibly will be a good starting point for exploring restoration of road connections/loops post-mine.

Thanks.



"Marcie Bidwell"  
<[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
04/06/2010 09:30 AM

To "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc  
bcc  
Subject Santa Ritas and MPO profile

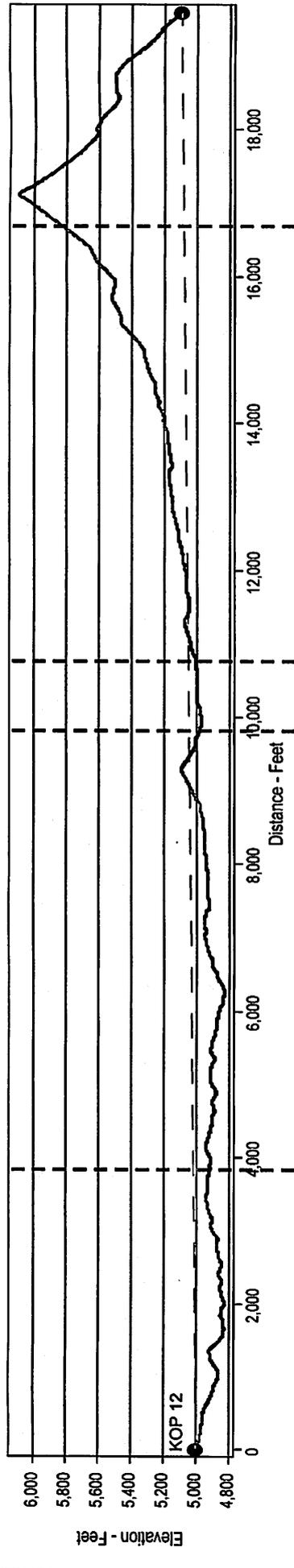
<<MPO Profile.pdf>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938

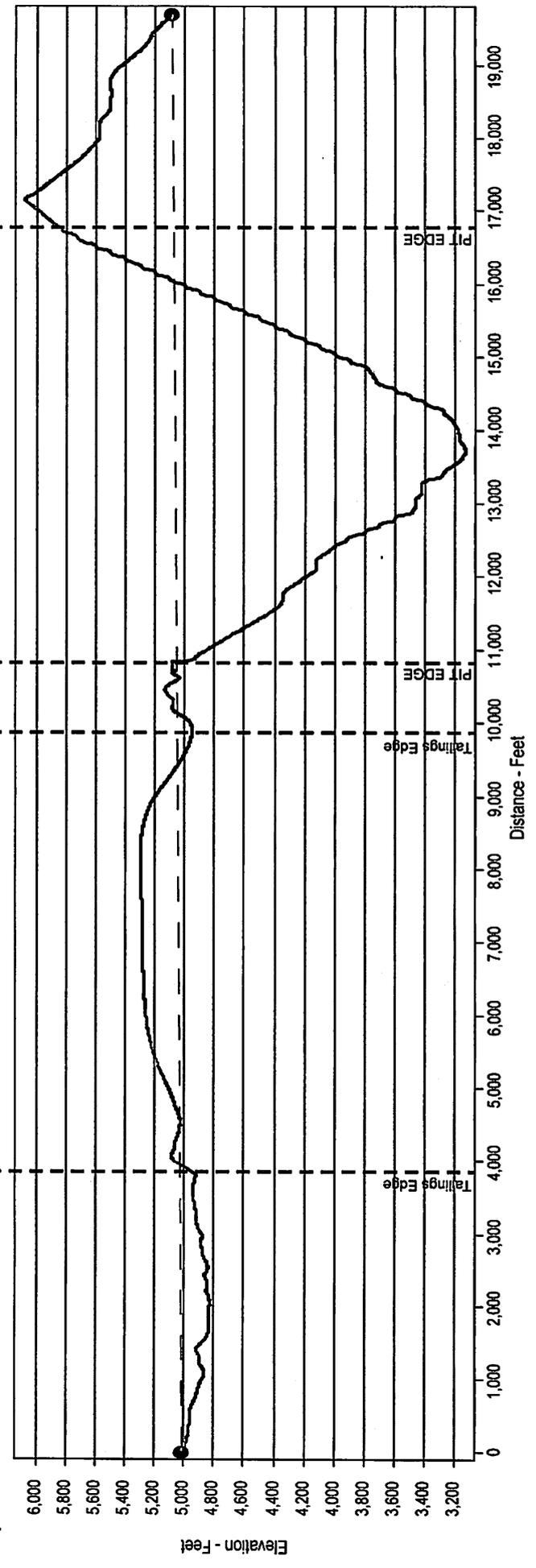


[www.swca.com](http://www.swca.com) MPO Profile.pdf

Existing Conditions Profile Line from KOP 12



Proposed Action Profile Line from KOP 12





"Dale Ortman PE"  
<daleortmanpe@live.com>  
02/10/2010 02:25 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Melinda D Roth" <mroth@fs.fed.us>, "Beverley A  
Everson" <beverson@fs.fed.us>, "Salek Shafiqullah"  
<sshafiqullah@fs.fed.us>, "Tom Furgason"  
bcc

Subject FW: Rosemont Landform Project

History:  This message has been replied to.

Debby,

Horst has agreed to a schedule that completes his work in time.....

Dale

**From:** Horst [mailto:hjschor@jps.net]  
**Sent:** Wednesday, February 10, 2010 11:26 AM  
**To:** 'Dale Ortman PE'  
**Subject:** RE: Rosemont Landform Project

Dale:

To clarify my situation with regards to the deadline now prescribed please understand that before I can start any Landform design work it is imperative to keep in mind that:

1. **I need written authorization to proceed.**
2. **I do not need** the Golder report to initiate Landform design work. There is much preliminary topographic analysis, volume computations and design evolution that has to be done before Golder's work comes into play.
3. No later than one week after start of my design work I will need the three (3) items listed under Section 2 "Available Information" in my last proposal (facilities location, heritage areas and the topography for three alternative waste layouts) in the formats stated.

With the delays encountered thus far, at this point **every day counts** and it is imperative in order to come close to the suggested March 3 deadline that I receive **written authorization before February 15.**

Three (3) weeks are needed for a design undertaking of this magnitude and based on this and the above I foresee at this point a completion of the work by **March 8, 2010.**

Per your revised task schedule:

Task 1 \$ 4,000  
Task 2 \$27,000  
Task 3 \$ 5,000

Task 4b \$ 3,500

Total \$39,500

This is a design of considerable complexity that cannot be rushed through and done right.

I hope the team can understand and appreciate my position as I have been anxious to move forward with this assignment for quite some time.

Horst

**From:** Dale Ortman PE [mailto:daleortmanpe@live.com]

**Sent:** Tuesday, February 09, 2010 2:43 PM

**To:** 'Horst'

**Cc:** 'Debby Kriegel'; 'Melinda D Roth'; 'Tom Furgason'; 'Marcie Bidwell'; 'Melissa Reichard'

**Subject:** Rosemont Landform Project

**Importance:** High

Horst,

The CNF has committed to finalize the list of alternatives for consideration in the Rosemont DEIS by March 15<sup>th</sup> and must determine if landforming is a viable alternative prior to that date. Therefore, the essential elements in your proposal of January 10, 2010 must be completed in time for the CNF to include them in their decision making process. Golder has confirmed that they will submit their report on Monday February 15 and you can receive a copy no later than the following day. In order to meet the deadline it is necessary for you to complete the following work elements no later than March 3<sup>rd</sup>:

- Task 1, Second bullet item - "review.... Golder's report and its implications for the Landform design." Note: Golder will be available for limited consultation.
- Task 2 – Landform Design
- Task 3 – Study three alternative locations for mine waste disposal
- Task 4b – Presentation of Landform design plans and findings to team members in Tucson. Note: In order to expedite the work schedule the design report (Task 4a) is not included in this work. Completion of the design report will be held until after the presentation.

Please let us know if you are able to complete the reduced scope-of-work within the necessary schedule, and any cost modification associated with the revision.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623

Beverley A Everson /R3/USDAFS

08/14/2008 01:18 PM



To Reta Laford/R3/USDAFS@FSNOTES, Teresa Ann Ciapusci/R3/USDAFS@FSNOTES, John Able/R3/USDAFS@FSNOTES, Andrea W Campbell/R3/USDAFS@FSNOTES, Jennifer Ruyle/R3/USDAFS@FSNOTES, Walter Keyes/R3/USDAFS@FSNOTES, Salek Everson/R3/USDAFS@FSNOTES, Debby Krieger/R3/USDAFS@FSNOTES, Keith Shafiqullah/R3/USDAFS@FSNOTES, Deborah K Sebesta/R3/USDAFS@FSNOTES, L Graves/R3/USDAFS@FSNOTES, George McKay/R3/USDAFS@FSNOTES, Tami Emmett/R3/USDAFS@FSNOTES, Shane Lyman/R3/USDAFS@FSNOTES, Eil Robert Lefevre/R3/USDAFS@FSNOTES, Christopher C LeBlanc/R3/USDAFS@FSNOTES, Curiel/R3/USDAFS@FSNOTES, Mary M William B Gillespie/R3/USDAFS@FSNOTES, Alan Belauskas/R3/USDAFS@FSNOTES, Kendall Farrell/R3/USDAFS@FSNOTES, Thomas Skinner/R3/USDAFS@FSNOTES, Larry Brown/R3/USDAFS@FSNOTES, Kendra L Bourgart/WO/USDAFS@FSNOTES, Janet Jones/R3/USDAFS@FSNOTES, Roxane M Raley/R3/USDAFS@FSNOTES, Heidi Schewel/R3/USDAFS@FSNOTES, tfurgason@swca.com, mreichard@swc.com, gsoroka@swca.com, kcox@swca.com, rbowers@swca.com, jmactivor@swca.com, Charles A Blair/R3/USDAFS@FSNOTES

cc

bcc

Subject San Manuel Field Trip, Wednesday, August 20, leaving at 7:00 a.m. from Federal Building

Hi Everyone,

We will be departing from in front of the Federal Building by bus for San Manuel promptly at 7:00 a.m. next Wednesday. Please let me know if you live in the Oro Valley area and prefer to meet the bus there at the Home Depot Store at 10855 N. Oracle Rd. We will look for you between Home Depot and Sports Authority at around 7:30.

Most of Arizona's metal mines were operated in the late 1800s, typically as underground operations. San Manuel is no exception, however, large scale underground mining did not begin until 1952. Open pit mining began in 1985, and all operations ceased in 1999 due to low copper prices. Surface reclamation of the area began a couple of years later and was completed at a cost of \$59 million in May of 2006 (though some reworking of the reclamation areas has continued). The reclamation was a "topographic based" design where reclaimed areas were recountoured to blend with the surrounding natural topography and then revegetated.

The San Manuel operation was a very important part of the economy and history of the area for multiple generations. The topping of the smelter stacks associated with the operation in January of 2007 was seen as progress to some, and the sad end of an era for others. We will learn a little more about the history of the operation with the site visit along with seeing the interesting reclamation techniques.

I will be forwarding a white paper comparing San Manuel and the proposed Rosemont Copper Project to you once I receive it from the company.

See you Wednesday.

**Debby Kriegel/R3/USDAFS**  
07/26/2010 10:03 AM

To tjchute@msn.com, Melinda D Roth/R3/USDAFS@FSNOTES  
cc Robert Lefevre/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont Mine: tree and shrub research needed for  
reclamation

Terry and Mindee,

Bob Lefevre has reviewed Jeff Fehmi's reports, and has also made comments on what work is complete and what is still needed. Please review the attached document.

Tom Furgason told me on Friday that he needs FS leadership to approve the scope of work and to tell Rosemont that this work is needed. SWCA can then identify a person with the right background to proceed.

Thanks.

~~~~~  
Debby Kriegel  
Landscape Architect  
(520) 388-8427

----- Forwarded by Debby Kriegel/R3/USDAFS on 07/26/2010 09:47 AM -----

**Robert Lefevre/R3/USDAFS**  
07/26/2010 09:31 AM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc  
Subject trees and Shrubs Research needs for reclamation

Debby, I went through the document and highlighted those items that were not yet done in yellow and those that I think are done or at least partially done enough to proceed in green. There are comments on each bullet. I hope this is what you needed. Let me know.



Rosemont\_Research\_Trees\_and\_Shrubs\_Scope\_of\_Work\_Lefevre.docx

I have not received any comments from Craig in response to your question to him (in red near the bottom of the first page). Have you?

Robert E. Lefevre  
Forestry and Watershed Program Manager  
Coronado National Forest  
USDA Forest Service  
520-388-8373

## Scope of Work - Research on establishing trees and shrubs on the Rosemont Mine site

May 27, 2010

The purpose of this research is to develop a strategy for the success of trees and shrubs on reclaimed lands in the proposed Rosemont Mine area (primarily the waste rock and tailings piles). The current research on seeding is an excellent start, but reclamation also needs to include trees and shrubs (including cacti) in order to more quickly stabilize the slopes and meet visual quality and other resource goals.

### Recommended Tasks

- Review previous revegetation research for establishing trees and shrubs on similar projects (i.e., mines or other large projects, similar vegetation types, similar elevation and climate, etc.). One contact should be Dr. John Harrington ([joharrin@nmsu.edu](mailto:joharrin@nmsu.edu)).
- Review the research paper "Flora and Vegetation of the Rosemont Area", McLaughlin and Asdall, 1977 (Debby Kriegel or Larry Jones can provide this document) and contact Brian Lindenlaub (WestLand). Consider both pre-settlement densities (e.g., using old photo points as references) as well as the desire to make mine blend in with vegetation surrounding the site. Patterns of plants on the reclaimed slopes should generally mimic those in the surrounding landscape, but fewer trees may be appropriate.
- Determine how re-establishment of some Madrean Encinal habitat would benefit N-S and E-W wildlife corridors and gene flow for wildlife species. Coordinate this work with Larry Jones.
- Using the General Ecosystem Survey and the 1977 report "Flora and Vegetation of the Rosemont Area, determine the potential for grass, shrub, and tree canopy.
- Evaluation criteria for success of trees and shrubs during the bonding period can be set using standard reforestation protocol. Typically, survival surveys are conducted on tree plantation sites one, three, and five years after planting with a 90% survival expected for successful regeneration.
- Determine which species and sizes of trees and shrubs would be successful on the outermost materials (rock and growth medium) planned for the mine site. Plants could include salvaging/transplanting, seedlings, and/or container plants. Review studies of stock size and transplant success. Determine the best planting methods (season, site prep, supplemental moisture, etc.). Consider salvaging mature shrubs to develop off-site seed production blocks.
- In order to assure that local plant genetics are maintained, trees and shrubs from the area only will be used for transplanting or seed collection.
- Determine whether the success or failure of the seed mix plants would have influence on any of the tree and shrub species. For example, if the seed mix plant growth is very robust, would clearing be required prior to planting trees/shrubs? Set standards for invasives on other seed contaminates. Determine whether the direct seeding (hydro or drilling) be done simultaneously with the transplanting. *Craig, do you have information on this subject for live oaks and shrubs such as rhus and ceonothus?*
- Determine whether there are specific species or groups of trees and shrubs best adapted to the different "growth mediums" planned for reclaimed areas. An example if the growth medium best for Agave survival is placed on slopes which are not conducive to Agave survival, an opportunity would be lost. At a later date, this information would be used to resolve what "growth medium" goes where -- for both visual and plant growth needs.
- Evaluate proposed treatment of topsoil. Provide recommendations for handling, stockpiling, and placing topsoil that will protect the microflora population and other qualities.

**Comment [rel1]:** This has not been done

**Comment [rel2]:** Reviewed by Lefevre. Dr. Fehmi has used appropriate plants to mimic the landscape with the exception of trees, which are currently not in the seed mix (and shouldn't be. We would want to plant seedlings, not sow seeds.) Brian Lindenlaub has probably not been contacted.

**Comment [rel3]:** This has not been done

**Comment [rel4]:** This has been completed and a version of it is being used in the DEIS.

**Comment [rel5]:** This is not a task. This is a standard I think we should use.

**Comment [rel6]:** This is partially done through the General Ecosystem Survey review and table of expected results development. Salvaging shrubs and/or trees has not been proposed as a mitigation measure as of 7/26/2010

**Comment [rel7]:** The practice of using native plants is inferred in the mitigation proposed.

**Comment [rel8]:** No clearing of grass or shrubs is anticipated in the proposed mitigation measures. The only standards for invasives listed in the mitigation measure is that they would be non-persistent. No determination for simultaneous seeding and transplanting has been made.

**Comment [rel9]:** This has not been done.

**Comment [rel10]:** The treatment of growth media is explained in the proposed mitigation measures. The majority of the growth media is not topsoil, so stabilizing the stored material is the primary task and is addressed in the mitigation measures. True topsoil, with living organisms, is limited compared to the total, and do date no provisions for special treatment have been made.

- Provide recommendations for backfill mix, fertilizer, mulch, irrigation, and weeding necessary for the successful growth of trees and shrubs. The use of fertilizer should be minimized to reduce impacts to the environment (including water quality).
- Provide typical planting plan layouts for various reclamation areas, and planting details.
- Estimate the approximate growth rates of plants on various slopes (this is needed for simulations and effects analysis, and can also be used to develop a performance based reclamation standard). Consider the difference of transplant growth rate vs. naturally-occurring growth rate
- Evaluate whether native transplant plugs and topsoil islands would be beneficial to establishing revegetation (including trees and shrubs) on reclaimed areas. Debby Kriegel can provide research papers on this topic.
- Determine where the needed plants can be obtained in the species, sizes, quantities, and appropriate time frame that would be necessary for various phases of reclamation. Options could include salvaging from the site (or nearby), purchasing from local nurseries, contracting propagation, or some combination. Contract propagation would require working with nurseries early, especially be specific about seed sources and minimum stock parameters; determine propagation protocols necessary to generate the stock types necessary for the reclamation. Determine what is needed to collect, process, and storing native seed (for seeding and propagation) in order to provide plants needed for revegetation throughout mine reclamation.
- Provide draft and final written reports that address all of the above.
- Coordinate all work with the Coronado National Forest (Debby Kriegel, Craig Wilcox, and Larry Jones).

**Comment [rel11]:** This was started in the greenhouse study and is being continued in the field studies. Recommendations are not out yet.

**Comment [rel12]:** Not done yet to my knowledge.

**Comment [rel13]:** Not done yet.

**Comment [rel14]:** Not done yet to my knowledge

**Comment [rel15]:** Not done yet.

**Comment [rel16]:** Not done yet.

**Comment [rel17]:** Not done yet.



"Trent Reeder"  
<treeder@swca.com>  
07/01/2010 09:47 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Marcie Bidwell"  
<mbidwell@swca.com>  
cc  
bcc

Subject RE: Box Canyon Road assessment

Sounds good. I'll conduct an initial reverse viewshed analysis to see which sections of Box Canyon Road will be viewable from the Waste Rock.

Trent

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, June 30, 2010 2:40 PM  
**To:** Trent Reeder; Marcie Bidwell  
**Subject:** RE: Box Canyon Road assessment

Sorry...maybe I didn't convey my thought very well. What I'm talking about is a digital model exercise. I'm suggesting that you might place one or more viewpoints in the red (visible) areas on the waste rock pile and run your computer viewshed mapping program to determine where there is a direct line-of-sight to Box Canyon Rd. This is the reverse of normal viewshed mapping. We'd still need to follow up with a site visit and photography (and vegetation screening will be an issue at that point, but this step might help to determine where to take a photo...which will be very tricky. I'll let you and Marcie discuss whether and how to do this. Thanks.

"Trent Reeder" <treeder@swca.com>

06/30/2010 12:46 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Marcie Bidwell" <mbidwell@swca.com>  
cc  
Subject RE: Box Canyon Road assessment

I was able to locate a set of photos that I believe are from Box Canyon Road. Unfortunately anything viewable from this position would be obscured by existing vegetation.

Trent

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, June 30, 2010 10:26 AM  
**To:** Trent Reeder; Marcie Bidwell  
**Subject:** RE: Box Canyon Road assessment

Trent and Marcie:

This is helpful. Looks like there is enough of the project visible to warrant a simulation, though it should be a simpler one than the one at KOP2.

I'm wondering whether it would be helpful to put points (maybe one at a time?) on the visible portions of the waste rock and run a reverse viewshed toward the road. Would this help narrow down exactly where on the road the views are from?

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

"Trent Reeder"  
<[treeder@swca.com](mailto:treeder@swca.com)>

06/30/2010 09:00 AM

To "Marcie Bidwell" <[mbidwell@swca.com](mailto:mbidwell@swca.com)>, "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>, "Tom Furgason" <[tfurgason@swca.com](mailto:tfurgason@swca.com)>, "Jonathan Rigg" <[jrigg@swca.com](mailto:jrigg@swca.com)>  
cc  
Subject: RE: Box Canyon Road assessment

Here are two viewshed images from the Box Canyon road south of the project area . Viewable areas are in red. The first one is a viewshed analysis from TT's current KOP8 location. Second image depicts a linear viewshed from a segment of the Box Canyon road (blue line). Results from the linear viewshed analysis can be a little misleading because of the overlap of viewsheds from the line. I shorten the analysis segment of Box Canyon road to an area where I believe would reveal more of the MPO. The current location of KOP 8 is in a low drainage with terrain upslope on both sides. As you move towards the west along the road, it opens up into more of a "bowl". Once at the intersection of Rd 231 and Box Canyon, the MPO Waste Rock southern slope would be quite visible. The last attachment depicts the shorter Box Canyon segment in blue and the viewshed results of this segment.

The green dot represents an approximate location where TT took the KOP 8 photos. I was able to locate this photo point by comparing both KOP 8 and KOP 3 panoramas, for which segments of each panorama overlap. In addition, I compared visible vegetation patterns/densities using

aerial images along with matching terrain characteristics between the panoramas and 3D generated surfaces.

Marcie mentioned that she took some photos along the Box Canyon road for which I will do some research to see if I can match those photos to some earlier GPS point data. If I can find a match, perhaps this will replace the current KOP 8 location. I will keep you updated on my progress.

Trent

<<TT KOP 8 Viewshed.pdf>> <<Box Canyon Road Viewshed.pdf>> <<Box Canyon Road Viewshed\_b.pdf>> \_\_\_\_\_

**From:** Marcie Bidwell

**Sent:** Friday, June 25, 2010 12:40 PM

**To:** Trent Reeder; Debby Kriegel; Debby Kriegel; Tom Furgason; Jonathan Rigg

**Subject:** Box Canyon Road assessment

Trent,

I talked with Debby regarding the Box Canyon Road KOP and its alignment issues (that the Tt GPS point and Tt photos do not align for Box Canyon).

We thought that if you did a linear viewshed analysis, we could determine if there is a point on the road that will have open views, or not; then we can assess if its important to have a field person retake those photographs.

Does that seem reasonable? Use a footprint that would be closer to the southern boundary (MPO, Upper Barrel) if you can.

Thanks!

Marcie

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

Durango, Colorado 81301

Office: 970.385.8566

Fax: 970.385.1938

[www.swca.com](http://www.swca.com)[attachment "TT KOP 8 Viewshed.pdf" deleted by Debby Kriegel/R3/USDAFS] [attachment "Box Canyon Road Viewshed.pdf" deleted by Debby Kriegel/R3/USDAFS] [attachment "Box Canyon Road Viewshed\_b.pdf" deleted by Debby Kriegel/R3/USDAFS]

Comments from Debby:

Include a map of each alternative and roads and ROS settings. Are any alternatives any better either during mine life or post-mine on recreation settings or access roads?

Maps have been prepared for each alternative footprint showing the relationship to ROS settings and existing FS roads and have been added to chapter 3.

Show what portions of the Arizona Trail would be moved in each alternative (and where the new locations would be).

The relocation of the Arizona Trail under each alternative is only a preliminary corridor. No physical assessment of the final realignment has been completed. The final trail realignment will be determined in coordination with the Arizona Trail Association. Since we don't know what the final realignment will be, we shouldn't include it in the EIS.

Determine whether east-west access across the ridge (at Gunsight or Lopez Pass) would be closed during mine life and post-mine.

I understand Rosemont is committed to keeping open the Gunsight Pass east-west access across the ridge open under each of the alternatives during operations and post-mine. However, this is dependent on the determination of whether the CNF or MSHA will have jurisdiction over the road.

Did you do a brief study of what OHV loops might be possible east of Hwy 83?

I have had an opportunity to review the potential for OHV trails east of State Route 83 to mitigate for the direct loss of roads/trails associated with the alternatives. I could not find a desired road and trail density condition for the area in the CNF Forest Plan, so I based it on the current road/trail density for the Santa Rita Backcountry Tour Area. There are 285 miles of designated Forest road/trail within the 90,060 acre (140 square miles) tour area for an approximate trail density of 2 miles/square mile.

Forest lands east of State Route 83 are approximately 3,000 acres (4.7 square miles). Remaining consistent with the road/trail density of the backcountry tour area means would allow up to 9.4 miles of road/trail ( $2 \times 4.7 = 9.4$ ). There are approximately 4 miles of designated FS roads currently crossing this area. To maintain a trail density of 2 miles/square mile, an additional 5.7 miles of road/trail could be developed in this area.

There is the potential to develop an OHV loop trail that connects two of the existing roads in the area. Although it is possible, because of the limited distance that would be available for riding (no more than 10 miles of trail), this would only partially mitigate the loss of existing opportunities as a result of the alternatives, up to 28 miles of roads/trails directly lost. Additionally, motorized recreation typically looks for longer riding opportunities. Although the Forest Service may consider having a greater trail density in the area, there would be issues to address including management of cultural resources and managing OHV use to remain out of the National Conservation Area and State Trust lands to the east.



"Marcie Bidwell"  
<mbidwell@swca.com>  
06/29/2010 02:46 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Rosemont Reclamation - what to expect

Thanks This is what we have been wanting, and it makes most sense that it should come from the USFS.

We will see what we can incorporate!  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, June 28, 2010 11:08 AM  
**To:** Marcie Bidwell  
**Subject:** Fw: Rosemont Reclamation - what to expect

Marcie,

Take a look at this and see if you have thoughts or comments. This information should be helpful to the simulations.

-----  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

----- Forwarded by Debby Kriegel/R3/USDAFS on 06/28/2010 10:07 AM -----

Robert  
Lefevre/R3/USDAFS To Beverley A Everson/R3/USDAFS@FSNOTES, Melinda D Roth/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
06/28/2010 08:24 AM cc Salek Shafiqullah/R3/USDAFS@FSNOTES, Craig P Wilcox/R3/USDAFS@FSNOTES  
Subjec Rosemont Reclamation - what to expect  
t

Here is my first prediction of what we might expect at Rosemont in the way of revegetation. Comments?  
Please send them!  
Robert E. Lefevre  
Forestry and Watershed Program Manager  
Coronado National Forest  
USDA Forest Service  
520-388-8373



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/26/2010 11:07 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject Simulations and Land Form thinking

History:

 This message has been replied to.

Debby,

Here are my ideas regarding how to "split" the level of effort and what is shown in the visible diagrams/simulations.

Let me know what you think. I would propose that this is a table that would be in the analysis methods section.

Thanks, Marcie

<<Visual Sim methods.xls>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual Sim methods.xls

**PROPOSED SWCA DIAGRAMS AND LEVEL OF DETAIL (Simulations, Land Form Diagrams, Not Visible)**

<b>Distance Zone</b>	<b>Average Distance</b>	<b>Description</b>
Foreground	0 Foot – 1/2 Mile	Individual plants, rocks, landscape features, transmission poles, and wires are visible and detailed. Details of earth movement, structure siding, vehicles, and other equipment are apparent.
Middleground	1/2 Mile – 4 Miles	Texture and forms of individual grasses and forbes are no longer apparent. Some individual trees are identifiable at the closer ranges of middleground and become groups or masses of trees at more distant extents. Land features are distinctive and fade to masses as distance increases. Transmission poles may be visible and transmission lines will fade or disappear from the casual observer depending on distance, atmospheric conditions, and sun angle. Structures fade through this range to forms and blocks, and surface details fade as distance increases.
Background	4 Miles – Horizon	Vegetation and landscape features appear as patterns, massing, and land forms. Transmission poles and vehicles may be visible when sharp contrasts in color or lighting occur or skylining appears. Structures are seen as forms and blocks.
Seldom Seen	Obstructed view or 15+ Miles	Portions of the landscape are generally not visible, hidden by intervening terrain or vegetation, or are over 15 miles away.

<sup>1</sup> Source: USFS Manual XXX Visual Resource Inventory

**e Diagrams)**

**SWCA Scope**

**KOPs 01, 02, 03- High Detail Simulation**

**KOPs 04-09- Land Form Simulation  
(previous example)**

**Not Visible Diagram or Visible/Not Visible  
Extents Map (Jimmy Pepper idea) marked  
with buffer showing 15 miles or further away**



"Parker, Jeff JJ"  
<Jeff.Parker@BHPBilliton.com  
>  
03/10/2009 02:08 PM

To <karnold@rosemontcopper.com>, "Bingham, Evelyn EL"  
<Evelyn.EL.Bingham@bhpbilliton.com>,  
<TAldrich@asarco.com>, <Ned\_Hall@FMI.com>,  
cc <Iskaer@nwma.org>, <tim@nevadamin.org>,  
<Sydney.Hay@azcu.org>, <mii@mii.org>,  
<kbennett@nma.org>, <beverson@fs.fed.us>,  
bcc  
Subject Re: Help on Operations and Reclamation Examples

Kathy

Certainly the heap leach at San Manuel would fall into this category.

Regards

Jeff

Jeff J. Parker  
Manager Sustainability & External Affairs  
Southwest Copper  
520.219.3524 office  
520.419.2590 cell

Message originated from my blackberry.

**From:** Kathy Arnold  
**To:** Parker, Jeff JJ; Bingham, Evelyn EL; Tom Aldrich (TAldrich@asarco.com) ; Ned Hall (Ned\_Hall@FMI.com) ; Al Cooper (Allen\_Cooper@fmi.com) ; Wittwer, Derek ; pete.kowalewski@tetrattech.com ; Joggerst, Jamie ; droth@m3eng.com  
**Cc:** Iskaer@nwma.org ; tim@nevadamin.org ; Sydney.Hay@azcu.org ; mii@mii.org ; kbennett@nma.org ; Beverley A Everson ; dkriegel@fs.fed.us ; Jamie Sturgess  
**Sent:** Tue Mar 10 15:38:25 2009  
**Subject:** Help on Operations and Reclamation Examples  
All –

I received a call from the visual resource specialist who is reviewing our project during an EIS. She is a landscape architect that is specifically interested in any land sculpting techniques that should be reviewed during the alternatives analysis for waste rock and tailings facilities.

I am hoping that you may be able to point me at either some good reports (or pictures) that address operating practices incorporating closure concepts up front or good examples of reclamation techniques that have incorporated land sculpting in closure designs.

Our project: As some of you know, ours is a fairly large facility and we will be managing just under 2 billion tons of material in waste rock and tailings facilities so some of the "boutique" closure options will not be appropriate for our facility. We are also located in the desert southwest with infrequent but high intensity rainfall which makes water management an important component of the reclamation. In addition we are incorporating filtered tailings into our operations so tailings deposition will be via conveyor rather than by pipeline. We are planning concurrent reclamation practices on 3:1 slopes and had planned on using a landform grading techniques.

In any case any help you may be able to give me would be greatly appreciated. I can be reached at the numbers below.

Regards,  
Kathy

**Katherine Arnold, PE** | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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"Marcie Bidwell"  
<mbidwell@swca.com>  
03/02/2010 12:00 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Melissa Reichard"  
<mreichard@swca.com>, "Trent Reeder"  
<treeder@swca.com>  
cc "Lara Mitchell" <lmitchell@swca.com>

bcc

Subject Data request for EPG~ thoughts and integration of multiple  
conversations

History:

 This message has been replied to.

Debby,

**Two pieces to this puzzle: (1) What does EPG actually need/want for alternatives information, and (2) what data do they then need and on what schedule?**

**(1) What does EPG actually need/want for alternatives information?**

I talked with Chelsa, and her team is discussing internally if they are going to explore alternatives in the simulations or if they will just show Rosemont's preferred alternative (which they are calling the MPO).

She will let us know today if they need alternative data, as if they only evaluate the MPO, they do not need new data.

**(2) what data do they then need and on what schedule?**

**Schedule-** they are going to their stakeholders THIS FRIDAY, and so they need something fast in order to use it. In discussing what EPG might need for data to understand if the alternatives would be visible from the transmission line, I am thinking that EPG may have to contact Tetra Tech directly, rather than have SWCA play middleman. Rosemont may need to pass approval for David and Tt to send them the data, as there is a time commitment to prepare and package the information in an organized fashion.

I am suggesting that Tetra Tech handle the data request for several reasons: (1) Tetra Tech has the latest and greatest alternative data, (2) what EPG would receive from Aran at the USFS would be older data that SWCA provided last summer, and (3) I assume that since EPG is working in 3DMax and CAD, that EPG would not be able to use SWCA's ESRI format files (GIS format) as easily (I spoke with Chelsa and they can use either shapefiles or contours, but for 3D surfaces would use CAD to generate, I think). We use ESRI grid format and Tetra Tech has been supplying us with ESRI-shapefiles, not CAD-based files.

As to the state of the data "whats most recent"~ As of yesterday, Tetra Tech has provided us with updated contours for two alternatives which would likely be visible from the western side of the Santa Ritas, Barrel Only and Sycamore/Barrel alternatives. These are likely to be of interest to EPG.

**You asked if this would come out of the visuals budget:** if Trent were to package what we have recently received from Tetra Tech and organize the data to use consistent EIS alternative naming conventions, we estimate that it would take 4-8 hours to package and organize the data.

I think that gets us up to date.  
Marcie

**From:** Chelsa Johnson [mailto:Cjohnson@epgaz.com]

**Sent:** Friday, February 26, 2010 10:44 AM

**To:** Kathy Arnold; EBeck@Tep.com; Debby Kriegel; kellett@fs.fed.us; Marcie Bidwell

**Cc:** Lauren Weinstein; Paul Trenter; Emily Belts

**Subject:** Rosemont 138kV Transmission Line - Simulation discussion with FS

Good Morning,

EPG has coordinated with Debby Kriegel and Marcie Bidwell last week regarding the proposed 138kV transmission line simulations. I've provided a summary of key discussion items:

- 1) Direction regarding the selection of the viewpoint for simulation 3 was previously requested by the Forest Service and EPG provided 4 photo options along Box Canyon Road near the crossing of Link 160. Both Debby and Marcie agreed that Option B would be the best selection for Simulation 3. Based on the wireframe representations, Debby and Marcie voiced concern that a portion of the project would be visible for viewers heading east on Box Canyon Road whereas the other options do not show any structures due to vegetation screening. In addition Debby noted that Option B is also at one of the KOP's for the mine and represents a typical viewing condition for Box Canyon recreation users. I have attached the preferred photo and viewpoint for your reference. We will be moving forward with this Simulation viewpoint.
- 2) Visibility of the mine was also discussed and we concluded that the mine would not likely be visible from the viewpoint at Simulation 3 Option B due to terrain and existing vegetation. On a follow up call with Marcie this week, we discussed the possible visibility of the mine from the other simulation viewpoints and concluded that 3D modeling of the proposed contours for the McCleary Alternative would be helpful. Debby, please let me know if we can get the latest contour information so we can create a 3D model to determine if any of the tailings would be visible.
- 3) Other concerns discussed include the clearing of the transmission line ROW. In particular, if the entire 100' ROW would be cleared of vegetation or if selective clearing would be implemented. I have contacted TEP engineers about their vegetation clearing standards and I will forward the information once it is received.
- 4) Debby inquired if the additional transmission line simulation viewpoints would provide a view of the route crossing the Santa Rita Mountains (Link 140). EPG noted that Simulations 2-6 would not have a view of Link 140. We concluded that Simulation 1 along Santa Rita Road does not have a view of Link 140 and Debby noted that the Forest Service may want to consider an additional simulation of the transmission line crossing the Santa Rita Mountains.
- 5) Debby also expressed concern regarding the specific placement of the transmission line structures along links 160 and 190, which are near Concern Level 1 roads. In September 2009, Debby provided EPG detailed comments regarding the transmission line routing options on FS land. She requested that a Landscape Architect from EPG conduct a detailed visual impact assessment and provide mitigation recommendations to minimize visual impacts. EPG noted that TEP engineers have provided typical structure height and span information; however, detailed engineering has not been finalized. We discussed the possibility of conducting a visibility assessment for links 160 and 190 or using wireframes to assess mitigation recommendations. EPG also noted that coordination with TEP engineers would be necessary to

determine constructability of recommended mitigation measures. Debby recommended avoiding placement of structures along ridges so that the project would not be skylined. EPG will assess mitigation measures for these links and coordinate with TEP engineers regarding constructability.

Thanks again for the input regarding the simulations and EPG will follow up with Rosemont/TEP regarding an additional simulation of the transmission line crossing the Santa Rita Mountains, TEP ROW clearing standards, and mitigation measures for links 160 and 190. Debby and Marcie, please let me know if I have missed anything with this summary or if you have any clarifications.

**Chelsa Johnson**  
Project Coordinator/Visual Resource Specialist

**epg**

**Environmental Planning Group**

Phoenix, Arizona

602-956-4370 phone

602-956-4374 fax

<http://www.epgaz.com>

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"Stephen Leslie"  
<sleslie@swca.com>  
08/19/2009 09:24 AM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>

cc

bcc

Subject RE: Thoughts on recreation impacts

History:  This message has been replied to.

Thanks,

That sounds like a reasonable mitigation to consider for some of those roads and trails.

Steve

---

**From:** Marcie Bidwell  
**Sent:** Wednesday, August 19, 2009 9:22 AM  
**To:** Stephen Leslie; 'Debby Kriegel'  
**Subject:** Thoughts on recreation impacts

Hello Steve,

Debby and I were just talking about ideas on impacts. Debby was thinking about the loops of roads and trails that will be truncated according to different potential alternatives.

She wanted me to log a thought in your head regarding if there is a potential to reconnect some of the loops, or to make new connectors to restore some of the recreation resources.

Just logging that thought,

Marcie

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

Durango, Colorado 81301

Office: 970.385.8566

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[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
06/15/2009 11:55 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Bounds~ Map boundaries- Visuals and Land use

Hello Debby

Welcome back~ hope you had a great time up north on vacation.

Please see the bounds of analysis discussion below. I had sent you a short description of it before you left, but I am not sure that we actually decided. I have further added on to that description and descriptions.

As we need to have an easily definable area, I shy'd away from doing a visual analysis of all areas that can see the Santa Ritas, and tried to use boundaries that already exist. You and I have discussed that Tucson is within view of the Santa Ritas, and thought that Pima County might be a good way to capture that area in a easier to define way.

Finally, I also suggested that we use the Nogales Forest Unit and the Coronado NF as two others, as the LRMP is defined by those units.

Please confirm/comment on the list below,  
Thanks!  
Marcie

---

**From:** Lara Mitchell  
**Sent:** Monday, June 15, 2009 10:34 AM  
**To:** Marcie Bidwell  
**Subject:** RE: Bounds~ Map boundaries- Visuals and Land use

Hi Marcie  
Just wanted to double check on the bounds for the maps, you want to show all of the Coronado NF, highlighted in blue on the attached screen shot? And all of Pima county, all the way out past Ajo?

Thanks

<<visual\_miles.pdf>>

---

**From:** Marcie Bidwell  
**Sent:** Friday, June 12, 2009 3:19 PM  
**To:** Lara Mitchell; Charles Coyle; Stephen Leslie  
**Subject:** Bounds~ Map boundaries- Visuals and Land use

Lara and Charles!

Here is what I recommend to the Forest for visuals. The boundaries should be existing GIS files.

**VISUALS:** RESOURCES

1. The temporal bounds of analysis for Visual Resources is intended to include the area that may impact or be impacted by the proposed project. As such, the temporal bounds of analysis include Construction, Operations, Reclamation, and Post-Closure. Additionally, within the Operations time boundary, a sub-boundary for visuals will include the completion reclamation of the tailings berm that is intended to screen the mine operation. waste rock butters?

2. The geographic bounds of the visual resource analysis is defined as (1) the project site (project boundary), (2) Nogales Forest Unit, (3) Coronado National Forest, and (4) Santa Cruz and Pima Counties. SPIT

7? **LAND USE:**

1. The temporal bounds of analysis for Land Use is intended to describe the land use planning that may impact or be impacted by the proposed project. As such, the temporal bounds of analysis include Construction, Operations, Reclamation, and Post-Closure.

2. Geographic- The potential impacts to Land Use Resources include the project area and surrounding lands as they are managed for land use, and are defined as (1) the project site (project boundary), (2) Nogales Forest Unit, (3) Coronado National Forest, and (4) southern Santa Cruz and northern Pima Counties.

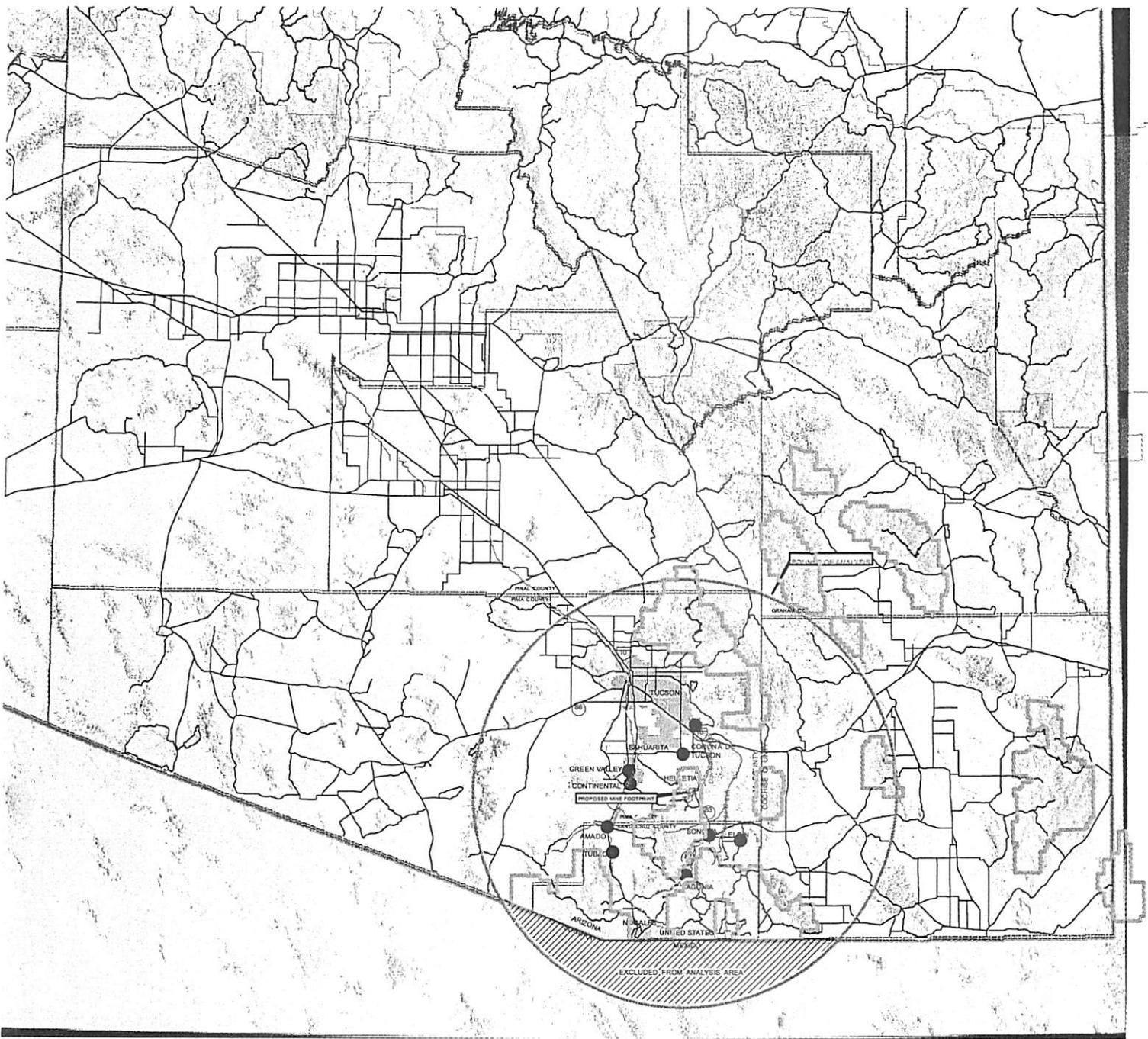
***If "northern Santa Cruz" and "southern Pima" is hard to define (perhaps cut them in half), then we could use the whole counties. Either way.***

Marcie Demmy Bidwell  
Environmental Planner  
515 East College Avenue  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) visual\_miles.pdf

Eastern Pima Co?  
+ all scruz } major project impacts





"Tom Furgason"  
<tfurgason@swca.com>  
04/01/2010 04:44 PM

To "Marcie Bidwell" <mbidwell@swca.com>, "Jonathan Rigg" <jrigg@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Beverley A Everson" <beverson@fs.fed.us>, "Melinda D Roth" <mroth@fs.fed.us>, "Rochelle Desser" <rdesser@fs.fed.us>, "Melissa Reichard"  
bcc  
Subject RE: Reclamation Concept from Rosemont~ how to incorporate

Marcie,

RE: Your questions

- 1) ***Are we to use the Phased Tailings as presented in this Reclamation Concept as Alternative 3 or are we to continue with the Phased Tailings as portrayed in the contours and alternatives so far this year?*** That is a great question and I don't have an answer. This will have to be ultimately decided by the IDT Lead (Bev).
- 2) Additionally, when will the Forest Service decide regarding Horst's alternative for Barrel Only? TBD- It is my understanding that the Coronado will likely retain the "original" Upper Barrel Only *and* add another alternative that is specific to the land forming work that Horst has submitted.
- 3) Now that we have the Reclamation Concept, there are several details in the drawing that may inform stormwater design for the "typical" stormwater for other alternatives. It would be Trent and I's preference that we receive formal direction to use those details, which details, and at what frequency across the landscape from Rosemont or Tetra Tech. I agree that we obtain formal direction. This will probably require consultation with the Coronado and Rosemont. **Debby**—could you please coordinate with Bev to set this up?
- 4) To make it easy for them, I may develop a "package" to return to them for them to approve as direction. That would be helpful, but I'd rather not burn budget on this unless the Coronado, TT, and Rosemont agree that we need to do this.

It seems to me that this would be a good time to have a tech transfer meeting on this topic.

Tom

---

**From:** Marcie Bidwell  
**Sent:** Thursday, April 01, 2010 4:24 PM  
**To:** Tom Furgason; Jonathan Rigg; Debby Kriegel  
**Subject:** Reclamation Concept from Rosemont~ how to incorporate

Hello Tom and Debby,

Now that the Reclamation Concept has finally arrived and includes the detailed portrayal of the Phased Tailings alternative~

***Are we to use the Phased Tailings as presented in this Reclamation Concept as Alternative 3 or***

***are we to continue with the Phased Tailings as portrayed in the contours and alternatives so far this year?***

Additionally, when will the Forest Service decide regarding Horst's alternative for Barrel Only?

Now that we have the Reclamation Concept, there are several details in the drawing that may inform stormwater design for the "typical" stormwater for other alternatives. It would be Trent and I's preference that we receive formal direction to use those details, which details, and at what frequency across the landscape from Rosemont or Tetra Tech.

To make it easy for them, I may develop a "package" to return to them for them to approve as direction.

Talk to you soon,  
Marcie

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

Durango, Colorado 81301

Office: 970.385.8566

Fax: 970.385.1938



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/24/2010 12:31 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>  
cc  
bcc

Subject RE: Rosemont Request for Information

Debby,

Thank you for continuing the follow up on these much needed items.

As to the contours, we do have the correct data set for the contours. I have confirmed this information. I apologize for the confusion/mis-information prior. I was hoping that there would be more data beyond the project area, and we have what we have. That's part of why the mountains do not always appear exactly the same in the GIS scenes as they do in the photos. As we are currently not planning on showing the GIS scenes in the specialist report, that works fine for me.

**Important Note!** We are waiting for stormwater direction from Tetra Tech per the conversation three weeks ago that determined that we should wait for Golders Report before proceeding. David said he is working on a memo- we are checking their FTP site for information.

David Krizek suggested that seeing Golders Report would be useful to making these decisions. Could the FS forward that report to David and Rosemont, if they have not already?

**Until the stormwater is decided, all of the simulations are all on hold. We are waiting for that information, and would like to get that process moving.**

Thank you!  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, February 19, 2010 2:52 PM  
**To:** Marcie Bidwell  
**Subject:** Rosemont Request for Information

Hi Marcie: I spoke with Kathy this morning and we went through this list. Debby



"Trent Reeder"  
<treeder@swca.com>  
08/31/2009 07:04 AM

To "Marcie Bidwell" <mbidwell@swca.com>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: I am in today, and Trent is working on the data

I will be in a meeting from 2-4 Tuesday afternoon and I also have a meeting the same day at 10 am.

I just downloaded the latest data from TT and I now should have all the necessary elevations. I also now have the cultural data from Lara.

Debby, even though Marcie is out today, I plan on finishing Alt's B and C today with the added cultural data for which we can discuss this afternoon if you need to see the results ASAP. Let me know. Thanks.

Trent

**From:** Marcie Bidwell  
**Sent:** Friday, August 28, 2009 3:03 PM  
**To:** Debby Kriegel; Trent Reeder  
**Cc:** Tom Furgason; Lara Mitchell  
**Subject:** RE: I am in today, and Trent is working on the data

Trent,

Do you have Arch data? Can you coordinate with Lara on this one?

Trent is in the process of downloading the data from TT, and we hope its right this time (third time is the TT charm, we hope for them).

Will 2:00 on Tuesday AZ time work for Trent and Debby?  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, August 28, 2009 3:00 PM  
**To:** Marcie Bidwell; Trent Reeder  
**Cc:** Tom Furgason; Debby Kriegel  
**Subject:** Re: I am in today, and Trent is working on the data

Marcie,

I liked your idea of simply pushing the east buttress up against the rest of the waste rock pile. This would get the material a little farther away from Highway 83, while still creating some less monolithic topography.

Also, our archaeologist told me that the east lobe in 6b and 6c covers an archy site called "the ballcourt", which is probably the most significant cultural site near here. Is there a way to get a map of the ballcourt location? I know the focus of this exercise is on visual resources, but avoiding this archy site might give Tetra Tech additional rationale to relocate/reshape the pile.

I'm headed home now. Please call me when you're in next week (Monday or Tuesday).

Thanks!!

Debby

"Marcie Bidwell" <mbidwell@swca.com>

08/28/2009 11:22 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder" <treeder@swca.com>  
CC "Tom Furgason" <tfurgason@swca.com>  
Subject I am in today, and Trent is working on the data

Debby,

Just an update while I deal with some other issues first this morning.

Trent is working to get the TT data with the contour data attached. They keep sending data without elevations. He is on task and talking with Ashley to resolve this. If he gets an update, he will call you directly and pull us together.

I am here today until 2. If we get the data ironed out there will be something to talk about.

As I understand it talking with Tom (SWCA) and Ashely and Joel (TT), we need to ask TT quesitons, they then ask Mouse Mountain, TT then tells us the answer.

If you would like to generate some questions regarding (1) how to move the pile and (2) where to move the pile (away from the highway, we could initate that process.

I am required to approve some invoices before I can work on this. Hope to have that done in the next hour.

I will call soon,  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566

Fax: 970.385.1938

[www.swca.com](http://www.swca.com)

## Task 5.2.Issue 2—Visual Resources

### Subtask A. Affected Environment Update for 6 Alternatives and Connected Actions

- Update affected environment to incorporate alternatives, for specialist report and EIS.
- Collect KOP in Tucson area with GPS and photography.
- Update basic existing conditions maps to show key observation points (KOPs), sensitive viewer areas, bounds of analysis, concern levels, and scenic objective classes.

### Subtask B. Prepare Alternatives Data: Convert CAD and Construct 3D GIS Surface

- Process CAD data and model data for GIS digital elevation modeling. Generate 3-D digital surfaces for the MPO and proposed alternatives at each construction phase selected for simulations.
- Create one set of 3-D working maps and diagrams for USFS and RCC to review potential scene from each KOP to be selected.
- Budget Assumptions: 12 data sets to process each alternative at 20-yr Phase and one additional time phase mid-construction.

### Subtask C. Prepare KOPs, Existing Conditions, Panoramas, and Visibility Maps

- Review all alternatives and KOPs established by the USFS and KOPs to propose to USFS for analysis, simulations, and level of detail for connected actions to define areas where impacts from the project is expected to be highly visible, distantly visible, and not visible (i.e. blocked or out of view)
- Prepare “existing conditions” panoramas for potential KOP simulations and review for use as simulations. For KOPs where project would be visible, select a phase to represent for each KOP in addition to Reclamation (i.e. construction at 5 years, etc.).
- Meet with USFS and RCC to review data, KOP selection and “photo realistic” process (1-2 meetings) includes meeting preparations, meetings, and meeting summaries. Review draft simulations with specialists from USFS, SWCA, and RCC to direct specific aspects of renderings (soils, reveg, etc.)
- Budget Assumptions: 8 KOPs 20-yr Phase and additional Phase for 6 KOPs

### Subtask D. Draft Specialist Report Analysis Methodology and Evaluation Criteria

- Draft analysis methods and evaluation criteria that will be used to define and evaluate project effects for the project resources included in the study for all alternatives and KOPs.

#### **Subtask E. Draft Visibility Diagrams and Simulations; Review with USFS/RCC**

- Create computer simulations of proposed alternatives (6 total action alternatives) for selected KOPs for highly visible, moderately visible, and distantly visible locations. Highly visible and moderately visible KOPs simulations will show 2 phases of the proposed alternatives for each KOP (e.g. TBD construction phase and 20-yr final reclamation). Each simulation will show waste rock and tailing pile forms, pit, roads, stormwater, vegetation, and infrastructure.
- For KOPs where the MPO and proposed alternatives would not be visible, prepare a section diagram or labeled panorama showing key landscape features and visual screen.
- Prepare photorealistic simulation images for KOPs.
- Review draft simulations with resources specialist from RCC, USFS, and SWCA to direct specific aspects of renderings; reclamation, soils, vegetation, etc.
- Complete a Draft review with USFS and RCC staff at meeting in Tucson.

#### **Subtask F. Prepare Environmental Consequences Analysis**

- Prepare an environmental consequences analysis for Specialist Report. Report will include analysis of direct, indirect, and cumulative effects, and compare alternatives. Utilize direction from FSM/FSH and USFS Project Level Scenery Analysis. Deliverables: Completed Visual Resources Specialist Report for all alternatives including draft simulations, visibility diagrams, and maps.

#### **Subtask G. Finalize Diagrams and Simulations; Review with USFS/RCC**

- Complete changes to simulations.
- Submit final formatted figures (e.g. panoramas, diagrams, simulations) to USFS and RCC for final approval.
- Budget Assumptions: Diagrams and Simulations will focus on land forms and will include 1 final review with USFS and RCC.

#### **Subtask H. Final Specialist Report.**

- Finalize Specialist Report and review with USFS.
- As needed, provide text for EIS.

#### **Assumptions:**

- Costs are based upon deliverables for each proposal according to the number of KOPs brought forward for simulations and figure diagrams. All alternatives will describe up to 24 KOPs for the analysis process. Revised USFS and USFS original budgets include up to 8 panoramas, non-visible KOPs diagrams for up to 6 KOPs, and simulations of highly visible and moderately visible KOPs for 8 KOPs for each of 6 proposed alternatives (up to 48 simulations) at 20-yr final reclamation and up to 6 KOPs for a construction phase per alternative (36 simulations). However, not

all KOPs will require simulations for all alternatives (i.e. Sycamore canyon will not be visible from many of the KOPs along SR 83). KOPs and level of detail for simulations will be formalized at the initial simulation meeting; however costs are assumed based upon the list of KOPs provided by the USFS Simulation Strategy.

- RCC to provide all data and elevations required for simulations, including a 3D model of any facilities, structures, or transmission infrastructure. USFS, RCC and SWCA will collectively contribute example imagery for depicting coloration, texture, formations, structures, and other details for portrayal in the simulations prior to simulations initiating. Surface data or changes to surface data that is provided/requested after 3D modeling is initiated will be incorporated on a time and materials basis. Direction regarding these details that is received after simulations have been initiated that varies dramatically may result in a change order. Simulations that require detailed development of the mine plant will be completed on a time and materials basis. Field work for 10 of the 14 KOPs has already been collected under the Visual Technical Report scope. SWCA assumes that Mt. Wrightson has been photographed by Rosemont's subcontractors and SWCA will be able to use this panorama for simulations. It is assumed that field documentation will be required for Box Canyon and Tucson KOPs at a minimum. Changes to the KOPs or to the construction phase selected for simulation after this meeting may require additional field work and may result in a change order. Additional KOPs, simulations, phases, or alternatives may be requested for an additional fee.
- Simulations will be classified as "highly visible" or "moderately visible". Highly visible simulations will show detailed variations in land form, vegetation, color, and texture for tailings and waste rock placement. Moderately visible simulations will show general variations in land form, vegetation, color and texture due to the level of detail being reduced by the distance of the viewer from the project area.
- Should KOPs simulations require extensive details of mining facilities, conveyors, equipment, transmission lines, etc, the work for these layers will be performed on a time and material basis, due to the unpredictable level of detail and effort required for these structures.
- Research for revegetation species and growth rates shall be provided by a separate contract funded by Rosemont. Based on findings, RCC and USFS are to agree upon the level of reclamation and vegetation success to be rendered prior to initiation of photoreal simulations. Changes in the direction given to SWCA to represent these aspects will require a change order, should they require additional time and effort to address.
- RCC will provide example photographs of existing reclamation, mining structures, vegetation mixes, soil types and colors, and other data to SWCA prior to the initiation of the simulations. Necessary imagery will be discussed at simulation meeting.
- This estimate assumes that SWCA will create 3D surfaces for MPO and proposed alternatives from RCC CAD drawings for up to 2 phases of construction. Should RCC provide GIS surfaces, these costs may be reduced accordingly.

- Changes in data, proposed action, and level of detail requested for simulations, phases of construction, and resolution of imagery after project initiation will require adjustments based upon time and materials. SWCA will submit surfaces to RCC and USFS for review prior to creation of simulations.
- Cost estimate includes two in-person meetings as two trips to Tucson for Marcie Bidwell to work with USFS and RCC on simulations, per direction of USFS staff. Additional trips may be required by USFS or RCC, and these will be arranged through an additional change order. Each task includes meeting hours for senior staff, visual specialist, editors as necessary and senior GIS under each task; additional meetings may be arranged on a time and materials basis.
- This scope of work includes one round of draft review and one round of final review for specialist report and simulations, unless review comments are extensive, in which case an additional draft review may be needed. Additional changes, reviews, or updates will require an additional change order. Ideally, review of final images will require minimal edits agreeable to both USFS and RCC for accurate portrayal of the MPO. Explorations of mitigation options (such as painting facilities alternative colors or reducing pit contrast through other than agreed-upon mitigation treatments ) would be covered under an additional scope. USFS and RCC should attempt to synchronize their comments prior to submittal to SWCA; should differences of opinion occur, SWCA will default to USFS guidance as the official SWCA client.

## **Resource Section Title**

### ***Introduction***

**ISSUES, CAUSE AND EFFECT RELATIONSHIPS OF CONCERN**

**SUMMARY OF EFFECTS BY ISSUE MEASURES BY ALTERNATIVE (TABLE THAT WILL BE USED ALSO IN CHAPTER 2)**

**ANALYSIS METHODOLOGY, ASSUMPTIONS, UNCERTAIN AND UNKNOWN INFORMATION**

### ***Affected Environment***

**RELEVANT LAWS, REGULATIONS, POLICIES AND PLANS**

**EXISTING CONDITIONS**

**Applicable Subheading (i.e. OHV Recreation)**

### ***Environmental Consequences***

**IMPACTS COMMON TO ALL ALTERNATIVES**

**Mitigation Effectiveness and Remaining Effects**

**Direct, Indirect, and Cumulative Effects**

**IMPACTS SPECIFIC TO EACH ALTERNATIVE**

**Mitigation Effectiveness and Remaining Effects**

**Direct, Indirect, and Cumulative Effects**



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/22/2009 07:51 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Tamara Larson" <tklarson@swca.com>  
bcc  
Subject RE: VQO/SIO discussion~

History:  This message has been replied to.

Thanks~

Here is the next section~ is this close to what you would want for landscape description?

#### 3.8.1.1 Existing Landscape Character

Landscapes and their scenic quality vary according to the diversity of landforms, vegetation, and cultural or man-made features present. In general, landscapes with greater diversity of features are considered to be of higher scenic quality. The landscape in this area of southern Arizona is within the Basin and Range physiographic province. Additionally, it is located within the Madrean Archipelago located between two cordilleras, which are the Rocky Mountains and the Sierra Madre Occidental. It is characterized as a series of mountain ranges separated by grassland or desert, rising above the arid lands to form islands in the sky, known as the Sky Islands. This eco-region spans from southern Arizona and New Mexico to northern Mexico with approximately 40 islands in the sky (Warshall, 1995).

Topographic pattern of the general area varies to include defined ridges, rocky outcrops, gentle slopes, wide valleys, and canyons. The elevation in the project area is approximately 4,800 feet mean sea level (msl), with the high point of proposed facility 5,200 feet msl and the top of the leach pit at 5,280 feet msl). The Santa Rita Mountains reach an elevation of 5,965 feet, are one of the Sky Islands located in the project area's foreground, and represent the prevalent natural landform in the Project Area. Rolling hills start in the foreground and continue into the middleground with deeply carved canyons and incised arroyos. From other areas of the Coronado National Forest, the Santa Rita Mountains and other Sky Islands form a backdrop or background as jagged silhouettes that create an irregular skyline of rocky promontories and ridges. More detail regarding landforms may be found in Section xx Geologic Resources.

Vegetation in the area is characteristic of arid climates with two main vegetative communities: Semi-desert Grassland and Madrean Evergreen Woodland. Semi-desert Grassland, found at lower elevations, is characterized by broadly defined grassland, mixed shrub-succulent or xeromorphic tree savanna (<http://earth.gis.edu/swgap>)<sup>[mldb1]</sup>. The Madrean Evergreen Woodland, at higher elevations and in the western and southern extents of the project area, is characterized by oak-juniper-mesquite woodlands and savannas. For more detailed description on vegetation, refer to the Biologic Assessment in Appendix XX or Section xx Vegetation.

Lines from flat, smooth planes of light colored grasses of the savannas contrast against the vertical angles of the trees and shrubs within the woodlands and vertical thrust of the rocky outcrops. Lines from landform features include undulating converging lines from gentle, dendritic slopes to the jagged and sharp skyline of the Santa Rita Mountains.

Textures in the area vary from smooth, low-lying grasslands to patchy clumps of trees and shrubs. Striations of vegetation define northern slopes and arroyo bottoms. Rough, rocky canyons and ridges contrast with expanses of smooth grassy slopes and patches of trees and shrubs. Isolated, dense stands of lush green vegetation cluster around rural residential areas and ranches that surround CNF.

Colors in the landscape are dramatically affected by season, lighting, sun angle, dust, air quality, and distance. Grasses and savannahs are typically bright green to golden yellows. From a distance of four miles or more the vegetation around the project site as background appears as muted tones of grays and sands dappled with hues of pinks and purples blending all herbaceous growth together.

#### Cultural Elements & Land Uses

The area surrounding the Rosemont Copper Project has high intrinsic values with a variety of cultural elements. Cultural elements are those human altered attributes in a landscape that add positive cultural elements with historical or nostalgic connotations. Visual evidence of this colorful past, include working ranches, old homesteads, mine equipment and landforms, and cultural influence of Spanish and Mexican occupation and settlement. Evidence of the old homesteads that were settled followed the Gadsden Purchase of 1853 still remains. Remnants of mining operations that continued into the nineteenth century extracting gold, silver and copper is apparent in the landscape.

Land use around the project area is a combination of private, state, BLM and Forest Service lands. The private lands are used for rural development, mining, and ranching. Ranching is the primary use of the nearby state trust lands. BLM and Forest Service lands are multiple use areas with dispersed recreation occurring most frequently in this region.

Current Forest Service land use in the Santa Rita EMA at the proposed Rosemont Copper Project site is largely recreation for roaded, backcountry, and wild backcountry settings. Present land use in the area outside of Forest Service land is recreation, scenic driving, ranching, and rural residential development.

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Wednesday, July 22, 2009 8:43 AM  
**To:** Marcie Bidwell  
**Cc:** Tamara Larson; Debby Kriegel  
**Subject:** Re: VQO/SIO discussion~

Marcie: I did a little editing. Thanks! Debby

#### 3.8.1.1 USFS Federal Policy and Guidance

Historically, federal policy directed that national forest plans utilize the 1974 Visual Resource Management System (VRMS). Forest plans, including the Coronado National Forest Plan (USFS

1986), would establish Visual Quality Objective (VQO) maps and other tools to set management objectives. However, since the mid-1990s, National Forests have been directed to use the improved Scenery Management System (SMS) and Scenic Integrity Objectives (SIOs) as defined within Forest Service Handbook 701 *Landscape Aesthetics: a Handbook for Scenery Management* (1995). The handbook provides guidance for defining landscape units based on landscape character types, scenic integrity, and scenic attractiveness, and for identifying sensitive travelways and mapping landscape visibility. Although the specific process, terminology, and mapping units for the VRMS and SMS are quite different, the components of both systems are similar, and analysis (i.e., affected environment, environmental consequences, mitigation, cumulative effects, etc.) for the proposed project yields largely the same results under either system (Kriegel, 2009). To remain consistent with the existing Coronado National Forest Plan, VRMS and VQOs will be utilized as the standard for this analysis; however, SMS and SIOs will be referenced as the current visual inventory to support the description of the existing environment.

Under VRMS, Visual Quality Objectives (VQOs) were established to assure visual resource integrity in all land management decisions (Forest Service Manual 2380). Lands are categorized to describe the allowable degree of alteration in a management area, which is measured in terms of visual contrast with the existing characteristic landscape. The categories present a scale from pristine to highly altered landscapes to be managed for: Preservation, Retention, Partial Retention, Modification, and Maximum Modification.

"Marcie Bldwell" <mbldwell@swca.com>

07/21/2009 07:29 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tamara Larson" <tklarson@swca.com>  
cc  
Subject VQO/SIO discussion~

Debby,

Glad we could talk today~ thanks for cutting me some slack regarding being in the field.

Here is the section that I was referring to for VQO/SIO section, as its written. Currently. As I know its hard to just see one section,

### 3.8.1 Applicable Laws, Regulations, and Policies

Mining projects on federal lands are guided by federal laws, regulations and policies with some state specific directions. The Arizona State manuals on mining have limited reference to visual resources. Therefore, federal policy and Coronado Forest Plan guidance serves as the legal

direction on visual resource management for the Rosemont Copper Project.

### 3.8.1.1 USFS Federal Policy and Guidance

Historically, federal policy advocated that national forest plans utilize the 1974 Visual Resource Management System (VRMS). Forest plans, including the Coronado National Forest Plan (USFS 1986), would establish Visual Quality Objective (VQO) maps and other tools to set management objectives. However, since the mid-1990's, National Forests have been directed to use the improved Scenery Management System (SMS) and Scenic Integrity Objectives (SIOs) as defined within Forest Service Handbook 701 *Landscape Aesthetics: a Handbook for Scenery Management* (1995). The handbook defines landscape units based on landscape character types, evaluation of scenic integrity, and evaluation of scenic attractiveness. Although the specific process, terminology, and mapping units for the VRMS and SMS are quite different, the components of both systems are similar, and analysis (i.e. affected environment, environmental consequences, mitigation, cumulative effects, etc.) for the proposed project yields largely the same results under either system (Kriegel, 2009). To remain consistent with existing Coronado Forest Plan, VRMS and VQOs will be utilized as the standard for this analysis; however, SMS and SIOs will be referenced as the current visual inventory to support the description of the existing environment.

Under VRMS Visual Quality Objectives (VQO's) were established to assure "visual resource integrity in all land management decisions" (REFERENCE).. Lands are categorized to describe the allowable degree of alteration in a management area, which is measured in terms of visual contrast with the existing characteristic landscape. The categories present a scale from pristine to highly altered landscapes to be managed for: Preservation, Retention, Partial Retention, Modification, and Maximum Modification.

If you have a chance to take a look at this on Weds, that would be grand!!

Thanks!

Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)



"Tom Furgason"  
<tfurgason@swca.com>  
01/15/2010 10:04 AM

To <dkriegel@fs.fed.us>  
cc "Marcie Bidwell" <mbidwell@swca.com>, "Stephen Leslie"  
<sleslie@swca.com>  
bcc

Subject AZ Trail Jamboree

History:  This message has been replied to.

Debby,

Here is the link to the map of the AZ Trail Jamboree ride from last weekend:  
[http://topofusion.com/maps/Jamboree/AZT\\_Jam\\_Web.jpg](http://topofusion.com/maps/Jamboree/AZT_Jam_Web.jpg)

Here is the link to the web site with more information: <http://topofusion.com/jamboree.php>

The other mountain bike event recently held in the area was part of the Arizona Endurance Series. The start/finish was near Rosemont Junction and did a big loop around the Kentucky camp area (<http://rockyroad5050.wordpress.com/salero-ranch-race/>). I have no idea what the participation was, but it would be easy to find out. Both events were organized by the same group of people.

As I mentioned during our meeting yesterday, the mountain biking community is becoming more aware of the area and I expect use of the Las Colinas segment of the Arizona Trail to increase steadily.

Please let me know if the Coronado would like me to unofficially reach out to the organizers to let them know about the need for special use permits for events like this on the Coronado.

## Tom Furgason

Program Director  
SWCA Environmental Consultants  
343 West Franklin Street  
Tucson, AZ 85701  
(520) 325-9194 ext. 110  
(520) 820-5178 mobile  
(520) 325-2033 fax



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/30/2010 04:09 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder"  
<treeder@swca.com>  
cc  
bcc

Subject RE: Vegetation changes to simulations - 1 of 3

History:  This message has been replied to.

Thank you Debby for the comments. I am working my way through the rock colors that Tetra Tech uploaded July 20<sup>th</sup> or so (after we had been asking for them for months). I have not made it through all of them yet. Thank you for noting which KOP the pit comment came from because that does make it easier to decipher appropriate actions.

One note- David and I are switching our label names for KOP to a more USFS-friendly term "View Point" rather than KOP (more BLM accepted). We will however still label the files as KOP, because we have so much completed under that naming convention.

I could go over the images with you- what does your Monday afternoon look like?

Trent, please see the edits below.  
Thank you,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, July 30, 2010 3:07 PM  
**To:** Marcie Bidwell  
**Cc:** Debby Kriegel  
**Subject:** Re: Vegetation changes to simulations - 1 of 3

Thanks for sending the new graphics. The vegetation looks good to me (i.e., reduced amount of reveg).

Once you get the channel/road around the pit added to one simulation, I'd like to see it.

The simulation that Kathy Arnold commented on the pit looking like it was in front of the mountain was from KOP 6. Have you messed with a simulation for that KOP recently?

I'm still concerned about the pit color. Did you find out whether Tom can send someone out to take photos of the existing quarry? Some of your simulations show the upper pit as the same color as the grass in the foreground. Is this rock really that dark, or is it more whitish?

I've briefly opened each of the dozens of files on the DVD Melissa burned. Many of these images I understand and look fine, others I'm less clear on. Would you like to go through these with me and explain what I'm seeing and what you'd like my ok on?

Comments on the seen area map

No virus found in this incoming message.  
Checked by AVG - [www.avg.com](http://www.avg.com)  
Version: 8.5.441 / Virus Database: 271.1.1/3038 - Release Date: 07/30/10 06:34:00



"Marcie Bidwell"  
<mbidwell@swca.com>  
08/17/2010 11:52 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>, "David Harris"  
<dharris@swca.com>

cc

bcc

Subject Update for Visual Resources 8/17

History:

✉ This message has been replied to.

Hello Debby,

Yes, we are working hard and great progress is being made.

I wanted to ask what your schedule will be like for next week or the end of this week.

I talked to Tom about sending David to the area to see the project area for himself and Tom agreed that would be a good idea. Finding the right time to stop writing and get him in the field is the issue.

#### Other updates-

1. EC- filling it in and we are moving the outline around as needed to keep it making sense.
2. Simulations- working on the last set- KOP 8, and refining the rest. It would be good to send you a package of the simulations in the figure format and get your response to them later this week.
3. AE- mostly updated, and adjusting as needed to prepare the reader for EC.
4. I received the paint chips and will be circulating photos of them in the sun later.
5. I am working to understand how reclamation as planned and as mitigated is being integrated/written into Chapter 2 so that we can build on it for our analysis.

My best to your mom! Hip injuries are so hard to deal with, its great that you can help her!

Cheers,  
Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, August 17, 2010 12:11 PM  
**To:** Marcie Bidwell  
**Subject:** Debby's

Marcie,

Haven't heard from you for several days, but I'm sure you're working hard.

I'm taking this afternoon off, and I won't be in tomorrow (my mom broke her hip over the weekend and I'll be helping her). I'll be back in the office on Thursday morning...can you provide an update or schedule then?

Thanks.

~~~~~  
Debby Kriegel  
Coronado National Forest  
Tucson, AZ 85701  
(520) 388-8427



"Marcie Bidwell "  
<[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
11/04/2009 07:33 AM

To "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc  
bcc  
Subject Original Visual Proposal

Debby,

Here is the original visual proposal that included some design time. When the RCC draft of SWCAs contract came back in the winter/spring, it had removed the design tasks and only included the specialist report.

Here is what I found..... You should have a copy of this as well. Still reviewing files  
<<Visual Proposal 2008-12-09.pdf>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual Proposal 2008-12-09.pdf

## **Rosemont EIS- Visual Design Services**

### **Task 1. Visual/Remediation Design Meeting, Remediation Field Trips**

*Tasks: Participate in one design/remediation briefing meeting with USFS staff, one 8-hour field visit with USFS and other USFS designees, and two 4-hour debrief meetings to review opportunities with project staff. Document and record notes, GIS data, and discussion from Field Visits.*

*Deliverables:*

*Site Analysis- Brief Meeting Notes/Technical Memo and Map that identifies critical viewsheds, opportunities and challenges for visual resource protection (and other resources that are identified to participate in the design process such as wildlife, water quality, etc.).*

*Design Alternatives Working Group Meeting- Facilitate working group meeting to (1) identify resources to participate in the alternative process, (2) define process, and (3) assign roles, responsibilities, and action items for design process.*

*Labor- approximately 46 hours for meetings, USFS field visit, and staff meetings.*

*Expenses*

### **Task 2. Collect, Analyze, and Summarize Design Information**

*Tasks: Collect, analyze and summarize constituent information through scoping, key interviews with Rosemont design team, USFS staff, FS records, and other relevant sources. Identify design opportunities for dry stacking, tailing pile orientation, placement, and remediation that are important to structure a design that maximizes visual protection.*

*Labor- approximately 138 hours for data collection, plan review and critique, and research*

*Expenses*

### **Task 3. Identify Design Evaluation Criteria for New Design/Alternative**

*Tasks: Identify evaluation criteria that will be used to define and evaluate project effects for the project resources included in the study. Evaluation criteria may include restoration indicators, design guidelines, setting indicator.*

*Deliverables: Design and Evaluation Criteria for project evaluation.*

*Labor- approximately 21 hours for development, structure analysis, draft and final criteria*

*Expenses*

### **Task 4. Prepare Visual Analysis/Alternative/Specialist Report**

*Tasks: Prepare a report which summarizes the existing alternative and recommends (1) areas for improvement for the existing alternative, and/or (2) defines a new alternative or design guidelines/standards for new alternative. Report should describe the remediation characteristics, tailing pile design specifics or location, and include maps to show recommended strategies.*

*Deliverables: Visual Analysis Specialist Report including Existing Alternative Critique and (if appropriate) Alternative Proposal, Summary of Research Findings*

*Labor- approximately 120 hours including GIS, editing, and specialist report*

*Expenses*

### **Task 5. Participate in Project Interdisciplinary Meetings**

*Tasks: Participate in interdisciplinary meetings to present information to other resource specialists, to collaborate with USFS and their designees, and to participate in the development of new alternatives.*

*Labor- approximately 80 hours including up to 4 meetings, 8 conference calls, and meeting preparations (GIS, presentations, etc).*

*Expenses*

**Task 6. Prepare GIS Model of Visual Design Alternatives**

*Tasks: Prepare GIS model to explore design alternatives, implications from visual corridors, and affects of design proposal, remediation recommendations, and cumulative effects on visual qualitates and other identified resources.*

*Labor- approximately 150 hours including GIS, review, and project oversight*

*Expenses*

*Note, all totals are roun*

---

**Project Total**

*Assumptions*

Debby Kriegel/R3/USDAFS  
08/03/2010 10:53 AM

To "Marcie Bidwell" <mbidwell@swca.com>, dharris@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont AE and EC outline - Additional recommendations  


I just got out of a meeting with the project's new NEPA person (Terry Chute). Some things he recommended which relate to the outline and chapter 3:

1. In Affected Environment, improve the description of the landforms (Landscape Character) section to more clearly describe the major Rosemont-area landforms: Jagged and irregular ridgetops, steep rocky slopes near the ridge with sinusoidal curves across the face, rolling foothills with finger-like drainages, etc. You might want to review the Golder Associates landforming report for some ideas.
2. In the Environmental Consequences section, we can (and should) include statements about mitigation that is recommended to reduce visual impacts, but not included in DEIS simulations. The biggies here are landforming, planting trees and shrubs, and treating the white pit rock to darken it (with Permeon or equal). Terry suggested that, for landforming, we include verbiage explaining that while the Barrel Only alternative helps to break up the monolithic waste rock and tailings pile somewhat, the landforming concept could go further in order to mimic surrounding topography, restore natural drainage flows, reduce the engineered surface water structures (horizontal benches and drop structures), and design the main drainageway to be more natural (with rock weirs that would slow water and provide better revegetation), and that this would greatly reduce impacts.
3. On the simulations, the disclaimer should state that mitigation measures (landforming, trees, and treating the light-colored pit rock) are not shown. Hint that the simulations show a "worst case" scenario (without using the words "worst case"). And for those simulations where stormwater design was not provided by Tetra Tech (Scholefield? MPO?), but SWCA is showing typical or general structures, the disclaimer should state that final surface water design was not provided by Rosemont. Disclaimers can either be within the text or on the actual simulations; either is fine.
4. Be sure to reference the 2 landforming reports posted on the cooperating agency website (Golder and Schor).

Thanks.

"Marcie Bidwell" <mbidwell@swca.com>



"Marcie Bidwell"  
<mbidwell@swca.com>  
08/03/2010 07:48 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "David Harris"  
<dharris@swca.com>  
cc  
Subject Follow up questions on the outline

Hello Debby,

David is going to work on the outline and may call today with further questions.

Thanks!  
Marcie

**Marcie Demmy Bidwell**

**Environmental Planner**

**130 Rock Point Drive, Suite A**

**Durango, Colorado 81301**

**Office: 970.385.8566**

**Fax: 970.385.1938**

**[www.swca.com](http://www.swca.com)**



"Marcie Bidwell"  
<mbidwell@swca.com>  
04/20/2009 10:53 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Tailings Siting Study

History:  This message has been replied to.

That timing this afternoon would work great~ currently on a conference call but will be free when you return. How about you call me, as I suspect your time between 3:15 and end of the day~ I will tell the reception to prioritize your call.

Talk soon,  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, April 20, 2009 10:17 AM  
**To:** Marcie Bidwell  
**Subject:** RE: Tailings Siting Study

I'm in the office today until 3:15 AZ time (4:15 your time, right?). Call me when you have a few minutes.

Also, any chance you've developed wording for your unfunded scope of work items (i.e., descriptions that could go into the letter to Rosemont)?

"Marcie Bidwell" <mbidwell@swca.com>

04/20/2009 09:13 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject RE: Tailings Siting Study

Debby,

I completely agree with you~ perhaps their digital elevation models will be useful though, for our analysis.....

would you have time this afternoon to talk this over?

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, April 20, 2009 9:00 AM  
**To:** Marcie Bidwell

**Cc:** Debby Kriegel  
**Subject:** Fw: Tailings Siting Study

Marcie,

I'd like your thoughts on this study. I briefly looked it over and doubt that it is of much value to us. It isn't clear whether Rosemont used any of the Coronado's Concern Level 1 and 2 travelways for viewshed mapping. In the text they mention "roads and trails" and "recreation sites", but I didn't see any specific information on any of these. Based on the viewshed maps, it appears that they used KOPs in Tucson, but it's unclear what other points they used. The fact that their maps are missing some major visually sensitive places (like the Arizona Trail), and the lack of any descriptions of which roads and trails and rec sites they considered in viewshed mapping makes me believe that this stuff isn't helpful to our work. If you think it's worth trying to find out more about what they used in their model, feel free...but I don't recommend spending a lot of time on this.

It also looks like they only considered locations where they could dump 100% of the tailings in one place. While this is likely the most cost-effective for Rosemont (and possibly makes sense for other reasons), I'd like us to keep our minds open to options. Speaking from a non-mining background, moving a pipeline and dewatering plant once during a 20 year mine operation seems plausible if putting tailings in 2 locations is dramatically better.

As previously discussed, please plan to run the visibility studies yourself using the USFS sensitive travelways.

Thanks!

Debby

----- Forwarded by Debby Kriegel/R3/USDAFS on 04/20/2009 07:09 AM -----

"Tom Furgason"  
<tfurgason@swca.com>

04/17/2009 02:37 PM

To <dkriegel@fs.fed.us>, "Marcie Bidwell" <mbidwell@swca.com>  
cc "Charles Coyle" <ccoyle@swca.com>, "Melissa Reichard" <mreichard@swca.com>,  
"Beverly A Everson" <beverson@fs.fed.us>  
Subjec FW: Tailings Siting Study  
t

Debbie,

Per my message, attached is the tailings study that I mentioned. This may provide some useful information for brainstorming alternatives. The appendix has the digital terrain models that may be useful to consider when determining the KOPs that you would like us to use in the analysis. Have a good weekend.

Tom

**From:** Joggerst, Jamie [mailto:Jamie.Joggerst@tetrattech.com]  
**Sent:** Thursday, April 09, 2009 10:58 AM  
**To:** Tom Furgason  
**Cc:** Kathy Arnold  
**Subject:** Tailings Siting Study

Tom,

Kathy asked me to provided you with the Tailings Siting Study completed in 2006. The document can be found on Rosemont's website (see below). However, we just realized that Tables 3-3 and 3-4 where accidently left out from the document on the website. So the tables are attached.

<http://www.rosemontcopper.com/MPO/4RosemontTailingsSitingStudy.pdf>

Kathy also mentioned that you were looking for a DTM of Sycamore and Schofield Canyon. Does that mean you want topographic contours?

Thanks

**Jamie Joggerst | Geotechnical Engineer**  
Phone: 520-297-7723 | Fax: 520-297-7724 | Cell: 520-820-7775  
jamie.joggerst@tetrattech.com

Tetra Tech  
3031 West Ina Road | Tucson, AZ 85741 | [www.tetrattech.com](http://www.tetrattech.com)

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**Issue Statement – Visual Impacts (formerly VRM Direct and Indirect Effects)**  
**Theme #s 84, 85, 88**  
**SWCA: Harmony Hall, Jill Grams**

Presence of mine-related facilities, equipment, and vehicles (e.g., ore processing plant, overhead utility lines, tailings, buildings and other structures, roads, fences, drills, loading units, trucks, bulldozers, graders, water pipeline, etc.) from visually sensitive travelways and viewpoints including Scenic Byway SR 83, USFS roads, and USFS trails may directly result in:

- Reduced scenic quality from visually sensitive travelways and viewpoints (e.g., SR 83, USFS roads, USFS trails, residential areas, etc.),
- Displacement of visitors to project site and surrounding area,
- Compromised Scenic Byway SR 83 designation,
- Alteration of valued landscape (form, line, texture, and color) in Rosemont Valley,

and may indirectly result in:

- Increase in visitor use at other locations
- Loss or reduction in tourism revenues associated with visitors to the area and Scenic route SR 83, and
- Reduction in quality of life to local residents.

Ground disturbance, topography alteration, and landscape changes resulting from mining-related activities (clearing, grading, open pit, waste rock dumps, tailings) may directly result in:

- Reduced scenic quality from visually sensitive travelways and viewpoints (e.g., SR 83, USFS roads, USFS trails, residential areas, etc.),
- Displacement of visitors to project site and surrounding area,
- Alteration of valued landscape (form, line, texture, and color) in Rosemont Valley

and may indirectly result in:

- Increase in visitor use at other locations,
- Loss or reduction in tourism revenues associated with visitors to the area and Scenic route SR 83,
- Cumulatively contributing to the loss of natural landscapes (wild places) in the Santa Rita Mountains and across the Coronado National Forest from numerous other sources (other mines, development and urban sprawl, border impacts, utility lines and towers, astrophysical sites, etc.), and
- Reduction in quality of life to local residents.

Reclamation that includes infrastructure removal, land sculpting so waste rock and tailings pile blend with natural landforms, alteration of visible upper pit walls, revegetation of waste rock facilities and site, and other project-related landscape disturbance may directly result in:

- Restored scenic quality from from visually sensitive travelways and viewpoints including Scenic Byway SR 83, USFS roads , and USFS trails, residential areas),

and may indirectly result in:

- Potential reversal of lost revenues associated with tourism, and
- Potential improvement in quality of life to local residents.

DRAFT

**Visual Resource Issue #1:**

Presence of mine-related equipment and vehicles (e.g., drills, loading units, trucks, bulldozers, graders, buildings, tailings, water pipeline, etc.) on Key Observation Points (KOPs), including Scenic Byway SR 83, USFS Scenic Roads (Box Canyon Road [FR 62], Madera Canyon Road/Madera Nature Trail #88, Mt. Hopkins Road [FR 184] may directly affect visual quality. Use revised issue statement wording (see attached document).  
Did you not receive this version?

**Analysis Question(s):** How will the presence of mine-related equipment and vehicles affect scenic resources? How will these changes affect different viewing populations (e.g. recreation, residents, scenic drivers)? Where will the presence of these activities be visible in the landscape? Good. Move sentence #3 to be the first sentence.

Deleted:

**Indicator of Change:**

Use the bullet statements from the revised issue statement (the items listed under “may directly result in” and “may indirectly result in”). Start each sentence with “Amount of...” or something similar.

Deleted: <#>Amount of change in human activity, cultural elements and mix of land uses!  
<#>Amount of change in scenic attractiveness and variety of classes to sensitive viewers and important concern areas from changes in activity and cultural elements!  
<#>Amount of change compared to existing scenic integrity and future desired conditions!  
<#>A change in concern levels due to changes in uses, levels of activity, and quality of view corridors!

**Visual Resource Issue #2:**

Ground disturbance, topography alteration, and landscape changes resulting from mining-related activities (clearing, grading, deposition of fill material, open pit, waste rock dumps, tailings) may directly result in changes to visual quality.

**Analysis Question(s):** How will scenic quality be affected from multiple KOPs and for different classes of viewers? Consider using the same 3 sentences from issue #1.

**Indicator of Change:**

- Amount of change in scenic quality from changes to form, line, texture, and color in the Project Area. Keep this. Add to issue #1 too.

Use the bullet statements from the revised issue statement (the items listed under “may directly result in” and “may indirectly result in”). Start each sentence with “Amount of...” or something similar.

Deleted: <#>Amount of change or contrast due to changes in the patterns of vegetation, landform scale and proportion, etc. !  
<#>Amount of change measured in acreage due to ground disturbance within sensitive viewsheds!  
<#>Amount of change in concern levels due to changes in scenic quality from landscape manipulation and activity!

**Visual Resource Issue #3:**

Reclamation that includes infrastructure removal and revegetation of waste rock facilities and other project-related landscape disturbance may directly result in affects to visual resources. Use revised issue statement wording (see attached document)

**Analysis Question(s):** How will visual resources be affected by reclamation and revegetation plans? How long will it take before reclamation is successful? What will

define reclamation success? What uses will return to the landscape after reclamation?  
Good.

**Indicators of Change: Good**

- Length of time until revegetation cover is achieved
- Length of time until vegetation diversity is achieved
- Amount of difference between existing vegetation and revegetated landscape
- Amount of contrast from reclaimed land form and surrounding landscape.

**USFS Scenic Integrity Objectives- Forest Service Guidance**

**Table 1 USFS SMS Scenic Integrity Objectives**

| LANDSCAPE THEME                                                                                                                                                                                                                                                                                                                                       | SCENIC INTEGRITY OBJECTIVE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| The landscape is intact, with only minute, if any, deviations. The existing character and sense of place should be expressed at the highest level. Human influence from historic use or management should appear completely natural to the majority of viewers.                                                                                       | Very High                  |
| The landscape appears unaltered and intact. Deviations may be present, but should repeat the line, form, color, and textures of the existing landscape character so completely, and at such a scale, that they are not evident.                                                                                                                       | High                       |
| The landscape appears slightly altered. Noticeable changes should remain visually subordinate to the landscape character being viewed.                                                                                                                                                                                                                | Moderate                   |
| The landscape appears moderately altered. Deviations and changes to the landscape may begin to dominate the landscape character. These changes should borrow valued landscape attributes such as size, shape, edge effects, patterns of natural openings, vegetative type changes, or architectural styles that are outside of the altered landscape. | Low                        |

Source: USFS 2000



"Charles Coyle"  
<ccoyle@swca.com>  
04/16/2009 09:18 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Beverley A Everson" <beverson@fs.fed.us>, "Teresa Ann Ciapusci" <tciapusci@fs.fed.us>, "Reta Laford" <rlaford@fs.fed.us>, "Stephen Leslie" <sleslie@swca.com>, bcc  
Subject RE: Rosemont - Wilderness Person with SWCA

Hi Debby,

Sure, it makes sense to have Steve handle both recreation and wilderness. I spoke with him just now and he's fine with it too.

Thanks~

Charles

-----Original Message-----

From: Debby Kriegel [mailto:dkriegel@fs.fed.us]  
Sent: Thursday, April 16, 2009 8:55 AM  
To: Tom Furgason; Beverley A Everson; Charles Coyle  
Subject: Rosemont - Wilderness Person with SWCA

I understand that the issue statements for Recreation and Wilderness may be combined. This is probably ok, since there is some overlap between the two topics.

I can't remember whether there is an SWCA person designated to work on the wilderness analysis yet. Please refresh my memory if I'm simply spacing this info.

Steve Leslie is currently assigned as the recreation specialist. This morning he told me that he has good experience with Wilderness (he was a wilderness planner with a BLM unit that managed 22 wildernesses). I suggest that he be designated the SWCA person to deal with both topics.

Is this possible?

Debby Kriegel/R3/USDAFS  
07/23/2010 02:32 PM

To mbidwell@swca.com, tfurgason@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Visual Analysis Presentation to Rosemont Today

Marcie,

Thanks for providing the graphic files for today. I presented everything to Rosemont and it went well.

I wanted to forward a couple of comments from Rosemont for your use:

1. Kathy commented that in the simulations (we were looking at the view from the Sonoita KOP when she said this), the upper pit looks a little like it's in front of the mountain instead of cut into the mountain. She asked that you verify that the pit is shown correctly. Please consider this comment and determine whether you know of something that might help, but don't spend lots of time on it.
2. Jamie commented that the color of the light-colored rock in the upper pit should look different depending on how close or far away you are (i.e., KOP 1 would be a slightly different color than the KOP near Sonoita). He suggested that someone visit the existing marble quarry on the other side of the Santa Rita Mountains (the scar you can see from Tucson) and take a photos at various distances to compare the color. If Tom can provide someone to do this, I agree that it would help defend the color choices.

Tom:

You mentioned that you can provide someone in the Tucson office to help Marcie when needed. Do you have someone available to follow up on item #2? Perhaps Marcie can provide more direction, but I'd recommend taking photos on a sunny day around noon at 2-3 miles away, ~5 miles away, and ~10 miles away.

-----  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Marcie Bidwell"  
<mbidwell@swca.com>  
04/13/2010 11:23 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject RE: Rosemont Data Gaps

History:

↩ This message has been replied to.

Debby,

I have some edits in your letter, but want to discuss a few things with you.

Did you receive a copy of this narrative from Tt regarding stormwater by alternative?

This is from over a month ago, but it had no maps or details attached. Seems like it should be included in your comments some how.

Calling to discuss,  
Marcie

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, April 09, 2010 8:27 AM  
**To:** Marcie Bidwell  
**Subject:** Rosemont Data Gaps

Marcie,

Please review this ASAP. Did I correctly describe what you still need? Other comments? Thanks!

~~~~~  
Debby Kriegel



(520) 388-8427 RCC\_Alts - Prelim SW Control and Rec Summary 2010-03-09.pdf



**TETRA TECH**

Tucson Office  
3031 West Ina Road  
Tucson, AZ 85741  
Tel 520.297.7723 Fax 520.297.7724  
www.tetrattech.com

## Transmittal Letter

<b>To:</b>	<u>Kathy Arnold</u>	<b>From:</b>	<u>David Krizek</u>
<b>Company:</b>	<u>Rosemont Copper Company</u>	<b>Date:</b>	<u>March 9, 2010</u>
<b>Re:</b>	<u>Alternatives Analysis – Preliminary Stormwater Control and Reclamation Sequencing Summary</u>	<b>Project #:</b>	<u>114-320871-3.1</u>
<b>CC:</b>	<u>Marcie Bidwell (SWCA)</u>	<b>Doc. #:</b>	<u>070/10-320871-3.1</u>

Please Find Enclosed:

<u>1</u>	<i>copy of</i>	<u>Alternatives Analysis – Preliminary Stormwater Control and Reclamation Sequencing Summary in Microsoft Word Format</u>
<u>1</u>	<i>copy of</i>	<u>Alternatives Analysis – Preliminary Stormwater Control and Reclamation Sequencing Summary in Adobe Acrobat Format</u>
<u> </u>		<u> </u>
<u> </u>		<u> </u>

Comments:

This information is preliminary and provided for use in alternative visual analysis associated  
with the Rosemont Copper Project.

Ship Via:

- FedEx:  Priority  Standard  2-day Economy  Ground
- UPS:  Standard  2<sup>nd</sup> Day  Overnight
- USPS Mail:  Regular  Priority  Certified
- Other: Email Delivery by Tetra Tech

## **Barrel and McCleary Alternative Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

For the Barrel and McCleary Alternative, it was assumed that the following stormwater controls would be applied:

- Stormwater drainage channels would be placed at every 100 feet of vertical rise (on approximate 50 foot wide drainage benches) on the outer slopes of the Dry Stack Tailings Facility. Stormwater would flow off these benches to stilling pools/drop-structures, located on the outer slopes of the tailings area, to natural ground, or to stormwater control basins located on wide benches in the Waste Rock Storage Area. Drop-structures located on the west side of the Dry Stack Tailings Facility would drain to the USGS Gauging Station located near SR 83.
- Drop-structures would be located on the north and west sides of the landform that comprises the Barrel and McCleary Alternative. These drop-structures would convey runoff to flow-through drains. The flow-through drains are large rock drains intended to provide a hydraulic connection between the up-gradient side of the landform and the down-gradient side.
- Stormwater control basins would be constructed on wide benches in the Waste Rock Storage Area to contain up to the 500-year, 24-hour storm event. Stormwater generated from flows in excess of the 500-year, 24-hour storm event would be routed to containment areas located between the toe of the Waste Rock Storage Area and adjacent natural ridge areas. These areas would generally be sized to contain the Probable Maximum Precipitation (PMP) event. Stormwater routing to these perimeter containment areas would be via rocked slopes connecting the benches to the perimeter areas.
- Decant structures would be installed on top of the North Dry Stack Tailings Facility to pass stormwater to stilling pools/drop-structures for flows in excess of the 500-year, 24-hour storm event. Storm flows less than this event would be retained on top of the facility in large, depressed areas.
- Storm flows in excess of the 500-year, 24-hour storm event generated on top of the South Dry Stack Tailings would be routed to a flow-through drain located on the west side of the landform comprising the Barrel and McCleary Alternative.
- The majority of the AMEC Earth & Environmental, Inc. (AMEC) Diversion Channel, located to the north and west of the Open Pit, discharges stormwater to flow-through drains located on the west and north sides of the landform.
- The Pit Diversion, located to the south of the Open Pit, is expected to discharge to an area located between the toe of the Waste Rock Storage Area and an adjacent natural ridge and will not drain to the USGS Gauging Station.

Drainage benches (about 50 feet wide) would also be placed on a small portion of the Waste Rock Storage Area adjacent to the closed and encapsulated Heap Leach Facility. These drainage benches would be similar to those planned for the outer surface of the Dry Stack Tailings Facility. Runoff from these benches would be to the up-gradient side (west side) of the landform.

Stormwater control basins located in the Waste Rock Storage Area would not be located above the closed and encapsulated Heap Leach Facility.

### **Reclamation Sequencing – Year 10**

Concurrent reclamation of the east slope of the South Dry Stack Tailings Facility is anticipated to occur. Reclamation of the north face of the South Dry Stack Tailing Facility is not anticipated to occur since this is an interim face and will eventually be covered by the North Dry Stack Tailings Facility. Haul road(s) will likely be on this face until covered by the north dry stack. A haul road will also be located on the west side of the South Dry Stack Tailings Facility, allowing for only partial concurrent reclamation of this side, as practical.

Concurrent reclamation of the eastern most face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

### **Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the east slope of the South Dry Stack Tailings Facility slope along with the east slope of the North Dry Stack Tailings Facility is anticipated to occur. A haul road is anticipated on the north face of the North Dry Stack Tailings Facility, allowing for only partial concurrent reclamation to occur, as practical. This haul road will also be on the east side of the South and North Dry Stack Tailings Facilities, again allowing for only partial concurrent reclamation to occur, as practical.

Concurrent reclamation of the eastern most face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

Areas not reclaimed during operations will be reclaimed at closure. A haul road(s) will likely be left on the west face of the North and South Dry Stack Tailings Facilities and on the north face of the North Dry Stack Tailings Facility.

## **Barrel Only Alternative Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

For the Barrel Only Alternative, it was assumed that the following stormwater controls would be applied:

- Stormwater drainage channels would be placed at every 100 feet of vertical rise (on approximate 50 foot wide drainage benches) on the outer slopes of the Dry Stack Tailings Facility. Stormwater would flow off these benches to stilling pools/drop-structures, located on the outer slopes of the tailings area, to natural ground, or to rock slopes adjacent to the Waste Rock Storage Area. Drop-structures located on the west side of the Dry Stack Tailings Facility would drain to the USGS Gauging Station near SR 83. Drop-structures would also be located on the west side of the landform that comprises the Barrel Only Alternative. These drop-structures would convey flows to flow-through drains. The flow-through drains are large rock drains intended to provide a hydraulic connection between the up-gradient side of the landform and the down-gradient side.
- Stormwater control basins would be constructed on wide benches in the Waste Rock Storage Area to contain up to the 500-year, 24-hour storm event. Stormwater generated from flows in excess of the 500-year, 24-hour storm event would generally be routed to containment areas located between the toe of the Waste Rock Storage Area and adjacent natural ridge areas. These areas would generally be sized to contain the Probable Maximum Precipitation (PMP) event. Stormwater routing to these perimeter containment areas would be via rocked slopes connecting the benches to the perimeter areas.
- Decant structures would be installed on top of the Dry Stack Tailings Facility to pass stormwater to stilling pools/drop-structures for flows in excess of the 500-year, 24-hour storm event. Storm flows less than this event would be retained on top of the facility in large, depressed areas.
- Construction of a portion of the AMEC Earth & Environment, Inc. (AMEC) diversion channel is assumed. This diversion channel routes stormwater runoff around the Plant Site area to McCleary Canyon Wash drainage, which eventually drains to the USGS Gauging Station location.
- The Pit Diversion, located to the south of the Open Pit, is expected to discharge to an area located between the toe of the Waste Rock Storage Area and an adjacent natural ridge and will not drain to the USGS Gauging Station.

Drainage benches (about 50 feet wide) would also be required on a small portion of the Waste Rock Storage Area adjacent to the closed and encapsulated Heap Leach Facility. These drainage benches would be similar to those planned for the outer surface of the Dry Stack Tailings Facility. Runoff from these benches would be to the up-gradient side (west side) of the landform.

Stormwater control basins located in the Waste Rock Storage Area would not be located above the closed and encapsulated Heap Leach Facility.

**Reclamation Sequencing – Year 10**

Concurrent reclamation of the east slope of the Dry Stack Tailings Facility is anticipated to occur. A haul road is anticipated on the north face of the Dry Stack Tailings facility, allowing for only partial concurrent reclamation to occur, as practical. This haul road will also be on the east side of the Dry Stack Tailings Facility, again allowing for only partial concurrent reclamation to occur, as practical.

Concurrent reclamation of the eastern most face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

**Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the east slope of the Dry Stack Tailings Facility is anticipated to occur. A haul road is anticipated on the north face of the Dry Stack Tailings facility, allowing for only partial concurrent reclamation to occur, as practical. This haul road will also be on the east side of the Dry Stack Tailings Facility, again allowing for only partial concurrent reclamation to occur, as practical.

Concurrent reclamation of the eastern most face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

Areas not reclaimed during operations will be reclaimed at closure. A haul road will likely be left on the west and north faces of the Dry Stack Tailings Facility.

## **Mine Plan of Operations (MPO) Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

Design work associated with the Rosemont Project has been ongoing since submittal of the Reclamation and Closure Plan (Tetra Tech, 2007). Based this updated design work, the stormwater controls described below were applied to the 2007 MPO Landform for this alternatives assessment:

- Stormwater drainage channels (on approximate 50 foot wide drainage benches) would be placed at every 100-foot vertical rise on the outer slopes of the Dry Stack Tailings Facility. Stormwater would flow off these benches to stilling pools/drop-structures located on the outer slopes of the tailings area, to natural ground, or to stormwater-control basins located on wide benches in the Waste Rock Storage Area;
- Drop-structures located on the west side of the Dry Stack Tailings Facility would drain to the USGS Gauging Station location located near SR 83. Drop-structures would also be located on the north and west sides of the 2007 MPO Landform. Flows emanating from these drop-structures would drain to a Central Drain or to stormwater ponding areas located between the toe of the North Dry Stack Tailings Facility and adjacent, natural ridge areas;
- The Central Drain, or flow-through drain, is a large rock drain intended to provide a hydraulic connection between the up-gradient side of the 2007 MPO Landform and the down-gradient side;
- An Infiltration Drain was incorporated into the 2007 MPO Landform that is hydraulically connected to the Central Drain. For the purposes of this stormwater alternatives assessment, the Infiltration Drain is assumed to pass storm events larger than the 500-year, 24-hour storm event off the top surface while smaller events are retained on the top surface in large, depressed areas;
- Stormwater control basins would be constructed on wide benches in the Waste Rock Storage Area to contain up to the 500-year, 24-hour storm event. Stormwater generated from flows in excess of the 500-year, 24-hour storm event would be routed to containment areas located between the toe of the Waste Rock Storage Area and adjacent, natural ridge areas. These areas would generally be sized to contain the Probable Maximum Precipitation (PMP) event. Stormwater routing to these perimeter containment areas would be via rocked slopes connecting the benches to the perimeter areas.

### **Reclamation Sequencing – Year 10**

Concurrent reclamation of the east and north slopes of the North Dry Stack Tailings Facility is anticipated to occur along with the east buttress associated with the South Dry Stack Tailings Facility. A haul road is anticipated on the west side of the North Dry Stack Tailings, allowing for only partial concurrent reclamation, as practical.

Concurrent reclamation of the east face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

**Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the east, north, and west slopes of the North Dry Stack Tailings Facility is assumed completed by the end of Year 10.

Concurrent reclamation of the east face of the South Dry Stack Tailings Facility is anticipated between Year 10 and the Ultimate Year. A haul road is anticipated on the west side of the South Dry Stack Tailings, allowing for only partial concurrent reclamation, as practical.

Concurrent reclamation of the east face of the Waste Rock Storage Area is anticipated along with south/southeast/southwest facing slopes.

Areas not reclaimed during operations will be reclaimed at closure. A haul road(s) will likely be left on the west face of the North and South Dry Stack Tailings Facilities.

## **Scholefield Tailings and McCleary Waste Alternative Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

For the Scholefield Tailings and McCleary Waste Alternative, it was assumed that the following stormwater controls would be applied:

- Stormwater drainage benches (on approximate 50 foot wide drainage benches) would be placed at every 100 feet of vertical rise on the outer slopes of the Dry Stack Tailings Facility. Stormwater would flow off these benches to stilling pools/drop-structures, located on the outer slopes of the tailings area, to natural ground, or to drainage benches located on the face of the Waste Rock Storage Area. Stormwater flow from these drainage benches would drain to the USGS Gauging Station located near SR 83.
- Stormwater drainage benches would be placed at every 100 feet of vertical rise on the outer slopes of the Waste Rock Storage Area, also on 50 foot wide benches. Stormwater would flow off these benches to stilling pools/drop-structures on the outer slopes of the Waste Rock Storage Area, or to natural ground. Stormwater flow from these drainage benches would drain to the USGS Gauging Station. Due to the configuration of the Waste Rock Storage Area, contouring and the creation of wide benches to pond stormwater runoff may not be achievable under this alternative
- Decant structures would be installed on top of the Dry Stack Tailings Facility to pass stormwater to stilling pools/drop-structures, or to natural ground, for flows in excess of the 500-year, 24-hour storm event. Storm flows less than this event would be retained on top of the Dry Stack Tailings Facility in large, depressed areas.
- Decant structures would be installed on top of the Waste Rock Storage Area to pass stormwater to stilling pools/drop-structures, or to natural ground, for flows in excess of the 500-year, 24-hour storm event. Storm flows less than this event would be retained on top of the Waste Rock Storage Area in large, depressed areas.
- Stormwater flows off the west face of the Waste Rock Storage Area would likely be conveyed to a flow-through drain. The flow-through drain is a large rock drain intended to provide a hydraulic connection between the up-gradient side of the Waste Rock Storage Area and the down-gradient side.
- Construction of a portion of the AMEC Earth & Environment, Inc. (AMEC) diversion channel is assumed. This diversion channel would be revised to route stormwater runoff around the Plant Site and draining into Barrel Canyon and to the USGS Gauging Station.
- The Pit Diversion, located to the south of the Open Pit, is expected to discharge to the upper reach of the Barrel Canyon Basin, eventually draining to the USGS Gauging Station.

Additional waste rock will likely be placed over the Heap Leach Facility to achieve closure. The Scholefield Tailings and McCleary Waste Alternative currently does not show a waste rock cap over the heap. Waste rock would be placed to achieve a minimum cover thickness over the heap surface and to achieve 3H:1V reclamation side slopes. Capping the heap with waste rock is not expected to reduce storm flows to the USGS Gauging Station.

As indicated above, creating wide areas and contouring of the benches of the Waste Rock Storage Area is likely not possible. Additionally, haul road access to the Dry Stack Tailings Facility, and to the Waste Rock Storage Facility, would likely be on the south face of the Waste Rock Storage Area. Concurrent reclamation of these access road areas may not be achievable until area-wide closure and reclamation.

### **Reclamation Sequencing – Year 10**

Concurrent reclamation of the east slope of the Dry Stack Tailings is anticipated to occur. Access to the tailings face will come from the south (from the Waste Rock Storage Area) and will move up the face as buttress construction advances.

Haul road access may be required on a portion of the south face of the Waste Rock Storage Facility, allowing for only partial concurrent reclamation, as practical. Concurrent reclamation of the west face of the Waste Rock Storage Area is anticipated.

The Heap Leach Pad is free standing and is expected to be closed after Y10.

### **Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the east slope of the Dry Stack Tailings is anticipated to occur. Access to the tailings face will come from the south (from the Waste Rock Storage Area) and will move up the face as buttress construction advances. Concurrent reclamation of the northwest face of the Dry Stack Tailings Facility is also anticipated to occur as the buttress advances upward.

Haul road access may be required on a portion of the south face of the Waste Rock Storage Facility, allowing for only partial concurrent reclamation, as practical. Concurrent reclamation of the west face of the Waste Rock Storage Area is anticipated.

Areas not reclaimed during operations will be reclaimed at closure. A haul road will likely be left on the south face of the Waste Rock Storage Area.

Capping of the closed heap is not shown but is likely to occur.

## **Sycamore Tailings and Barrel Waste Alternative - East Side – Waste Rock Storage Area – Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

Figure 2 shows the estimated eastern boundary of the post-mining contributing watershed area associated with the Sycamore Tailings and Barrel Waste Alternative. For this alternative, it was assumed that the following stormwater controls would be applied:

- Stormwater drainage channels would be placed at every 100 feet of vertical rise on the outer slopes of the Waste Rock Storage Area. Stormwater would flow off these benches to stilling pools/drop-structures located on the outer slopes. Drop-structures located on the northern half and a portion of the western half of the Waste Rock Storage Area would convey flows to the USGS Gauging Station location. Drop-structures would also be placed on the southern half of the Waste Rock Storage Area.
- Stormwater runoff generated from the southern face would be routed to containment areas located between the toe of the Waste Rock Storage Area and adjacent natural ridge areas. These areas would generally be sized to contain the Probable Maximum Flood (PMF) event. Due to the configuration of the Waste Rock Storage Area, contouring and the creation of wide benches to pond stormwater runoff may not be achievable under this alternative.
- Stormwater runoff generated from the top surface of the Waste Rock Storage Area would be routed to stormwater control basins located on the southern edge of the facility. Decant structures would then pass overflow to stilling pools/drop-structures located on the south face. Stormwater control basins would not be located above the closed and encapsulated Heap Leach Facility.
- Construction of a portion of the AMEC Earth & Environment, Inc. (AMEC) diversion channel is assumed. This diversion routes stormwater runoff around the Plant Site area to McCleary Canyon Wash drainage, which eventually drains to the USGS Gauging Station.
- The Pit Diversion, located to the south of the Open Pit, is expected to discharge to an area located between the toe of the Waste Rock Storage Area and an adjacent natural ridge and will not drain to the USGS Gauging Station.

There are no flow-through drains associated with the Waste Rock Storage Area under the final closure configuration.

### **Reclamation Sequencing – Year 10**

Concurrent reclamation of the south and southeast faces of the Waste Rock Storage Area is anticipated. Concurrent reclamation of the north side of the Waste Rock Storage Area is not anticipated due to operation of the Heap Leach Facility. A haul road may be required on the southwest face of the Waste rock Storage Area, allowing for only partial concurrent reclamation, as practical.

**Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the south and southeast faces of the Waste Rock Storage Area is anticipated. Concurrent reclamation of the north side of the Waste Rock Storage Area will begin once the Heap Leach Facility is closed in Year 10. A haul road may be required on the southwest face of the Waste Rock Storage Area, allowing for only partial concurrent reclamation, as practical.

## **Sycamore Tailings and Barrel Waste Alternative – West Side – Sycamore Tailings – Stormwater Control and Reclamation Sequencing**

### **Stormwater Control**

For Sycamore Tailings, it was assumed that the following stormwater controls would be applied:

- Stormwater drainage channels would be placed at every 100 feet of vertical rise on the outer slopes of the Dry Stack Tailings Facility. Stormwater would flow off these benches to natural ground and drain to the Stormwater Convergence Point.
- Storms up the 500 year, 24-hour storm event would be retained on top of the Dry Stack Tailings Facility in large, depressed areas. Storm runoff in excess of this event would be routed to side channels cut into natural ground.

There are no flow-through drains associated with Sycamore Tailings under the final closure configuration.

### **Reclamation Sequencing – Year 10**

Concurrent reclamation of the west slope of the Dry Stack Tailings is anticipated to occur since access to the face will move up the face as buttress construction advances.

### **Reclamation Sequencing – Ultimate Year**

Concurrent reclamation of the west slope of the Dry Stack Tailings is anticipated to occur since access to the face will move up the face as buttress construction advances.

Areas not reclaimed during operations will be reclaimed at closure.



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/22/2010 12:55 PM

To "Krizek, David" <David.Krizek@tetrattech.com>  
cc "Keepers, Ashley" <Ashley.Keepers@tetrattech.com>, "Trent Reeder" <treeder@swca.com>, <karnold@rosemontcopper.com>, "Tom Furgason"  
bcc  
Subject RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

David,

I spoke with Debby regarding KOPs and the other information pieces. I am working on typing up the notes, but wanted to give you the most important pieces quickly, which will save you some time.

Most importantly, Debby was very interested to hear of the larger scope for Tetra Tech for all alternatives, and wants to schedule a meeting to finalize the details. She is supportive of Tetra Tech and Sage providing further materials and data, but wants to make sure that all of the effort is necessary prior to finished products arriving for approval. There may be opportunities for cost savings, and some of them are listed below. She will be requesting a face-to-face meeting for next week (hopefully Friday will work for everyone).

**FYI- IN TUCSON NEXT WEEK:** I am tentatively planning a trip to Tucson for next Thursday- Friday and I will be available for meetings on those days.

**1. KOP Consolidation-** She was appreciative and understanding of the desire to have one list. She was very comfortable with consolidating KOPs as proposed in principle, and I am checking a few details (i.e. exact location of TT photography) to see if it will work for the USFS as new KOPs (USFS- Box Canyon and Mt. Wrightson) and I am doing some research for decision on the USFS decision on AZ Trail. All other KOPs seem fine. The three in question are also probably fine, but I am checking the details to be sure.

**2. Legal Concern regarding Hilton Road KOP and sharing it:** As the USFS is just supplying the gps for this point, Debby was comfortable with TT using it for viewshed analysis. You can proceed with this KOP.

**3. How many Viewshed Analysis- all KOPs or less?** With an appreciation for the amount of work that is involved (and associated costs), we discussed if viewsheds were necessary for all of the KOPs that are on the "short list" (the consolidated 8). Debby is comfortable with only doing viewshed analyses for less than all 8. For the purposes of the USFS and their methods, the KOPs within the USFS "middleground" or closer to the project area are the most important (basically within 5 miles), so the list could be shortened. I am working on that list, but you can count on KOP 1-3, 7 and 8 remaining on the list. Mt. Wrightson is definitely off of the list.

**4. Presentation of KOPs Viewshed Analysis-** We decided that the best way to present the viewshed analysis is to have the final product to be **one final map that adds all of the KOP results together**. That reduces the maps to (1) per alternative, a total of 6 maps + No Action= 7 maps total (which is better than 48). However, they will need to be in color to work in this format. I will send directions in a separate email.

I think that the most important pieces for now. More to follow this afternoon,  
Thank you again for the data and we hope to have our data on line for you by Monday (our office is closed due to winter storm)

Marcie

**From:** Krizek, David [mailto:David.Krizek@tetrattech.com]  
**Sent:** Friday, January 22, 2010 9:38 AM  
**To:** Marcie Bidwell  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

Marcie,

Would it also be possible to present the viewshed analyses in black and white to reduce copy charges?

It was a question from RCC.

Sincerely,

**David Krizek | Principal**  
Main: 520-297-7723 | Mobile: 520-260-3490 | Fax: 520-297-7724

*Tetra Tech*  
3031 West Ina Road | Tucson, AZ 85741 | [www.tetrattech.com](http://www.tetrattech.com)

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**From:** Marcie Bidwell [mailto:mbidwell@swca.com]  
**Sent:** Friday, January 22, 2010 9:33 AM  
**To:** Krizek, David  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

Thanks!

It may be Monday before all of our stuff is uploaded. Our office is closed today due to snow and our GIS team need to be on the server to upload stuff. It may happen over the weekend.

I am talking to Debby today regarding the viewshed presentation questions. I should have answers for you later.

Marcie

**From:** Krizek, David [mailto:David.Krizek@tetrattech.com]  
**Sent:** Friday, January 22, 2010 9:31 AM  
**To:** Marcie Bidwell  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** Tetra Tech Viewshed and KOPS - previous analysis - descriptions  
Marcie,

I have loaded to the ftp site the photos for the KOPs and other information related to KOP selection, etc. I also included the viewshed analysis that we did previously (pdf versions).

Sincerely,

**David Krizek | Principal**

Main: 520-297-7723 | Mobile: 520-260-3490 | Fax: 520-297-7724

*Tetra Tech*

3031 West Ina Road | Tucson, AZ 85741 | [www.tetrattech.com](http://www.tetrattech.com)

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"Stephen Leslie"  
<sleslie@swca.com>  
07/19/2010 08:28 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Jonathan Rigg" <jrigg@swca.com>, "Lara Mitchell"  
<lmitchell@swca.com>, "Tom Furgason"  
<tfurgason@swca.com>  
bcc  
Subject RE: FW: AZ trail alignment

Debby

I interpreted Marcie's email that the alignment of the Arizona trail has been moved unrelated to any alternative. I may have misinterpreted that based on your email below - it sounds like the new alignment is just a mitigation for the Barrel Only Alternative.

Can we confirm this so that Lara has correct information for the maps?

Thanks,  
Steve

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Monday, July 19, 2010 8:19 AM  
**To:** Stephen Leslie  
**Cc:** Jonathan Rigg; Lara Mitchell; Tom Furgason  
**Subject:** Re: FW: AZ trail alignment

I think that the idea of moving the trail east of Hwy 83 is only needed for the Barrel Only alternative, but please correct me if I'm wrong.

"Stephen Leslie"  
<sleslie@swca.com>

07/19/2010 07:59 AM

To "Lara Mitchell" <lmitchell@swca.com>  
cc "Tom Furgason" <tfurgason@swca.com>, "Jonathan Rigg" <jrigg@swca.com>, "Debby  
Kriegel" <dkriegel@fs.fed.us>  
SubjectFW: AZ trail alignment

Lara,

Can you please revise the recreation maps showing the Arizona Trail using the new alignment referred to in Marcie's email below? I'll also need the miles of trail impacted by alternative redone - unless it

doesn't overlap at all anymore.

Thanks,  
Steve

-----Original Message-----

From: Marcie Bidwell  
Sent: Saturday, July 17, 2010 1:05 PM  
To: Stephen Leslie; lmitchel@swca.com; Trent Reeder  
Subject: AZ trail alignment

Hello all,

I juist wanted to mention that the \_USFS mentioned that there is a new alignment for the AZ trail that moves it to the east of the highway (new in thje last three weeks. The layer is in the data that Trent sved for Tucson.

Also, the Scholefield haul road was created on Friday and included in the data set as well.

Finally, Trent will be sending transmission data from EPG on the ftp site for Tt. Perimeter roads will be drawn next week, as lines, and will not have engineering associated with them ( no grading) for the DEIS.

Let Trent know if you have data questions.

Thx,  
Marcie

Sent from my BlackBerry Smartphone provided by Alltel



"Marcie Bidwell"  
<mbidwell@swca.com>  
04/19/2010 08:51 AM

To "Terry L Austin" <tlaustin@fs.fed.us>, "Debby Kriegel"  
<dkriegel@fs.fed.us>  
cc "Michael Andres" <mandres@swca.com>  
bcc

Subject GIS questions for Rosemont Data

Hello Terry!

Its been a long time since we exchanged emails regarding data~ I wanted to introduce our GIS person, Mike Andres, who will be either emailing or calling you to discuss the attribute definitions for the Concern Levels for the routes in the Rosemont project area (Santa Rita EMA).

There are just a few labels that we want to make sure we are interpreting correctly.

Thanks!~  
Marcie

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
12/12/2008 09:04 AM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc "Tom Furgason" <tfurgason@swca.com>, Debby  
Kriegel/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES  
bcc  
Subject Re: Visual Proposal 

Marcie,

Good start. Some specific items in my 11/5 email to you aren't included, but that's probably ok...we can use both documents as guidance. And you've used some terms that I'm not familiar with such as "restoration indicators" and "setting indicators", but we can discuss that later.

I have a few immediate recommendations (and some questions):

1. Add a schedule for each task that ties to the Rosemont project schedule. Include as many dates for your work as possible: trips to Tucson, proposed meeting dates, deliverables, reviews, etc.
2. Does task 2 include researching other mining operations and reclamation? Roger Congdon (FS hydrogeologist on the team) mentioned that he knows of some great examples of waste rock reshaping and award-winning reclamation at BLM mines near Elko Nevada. I suggest that we plan a trip there (probably in January).
3. I don't see many of the written items that will need to be provided for the EIS listed in your tasks: issue statements, affected environment, environmental consequences, and cumulative effects. Please mention each of these in the appropriate task.
4. Do the hours on task 6 include more than your time and expenses? Won't you need a GIS/computer simulation expert to help with 3D modeling and create simulations for the final EIS? Are you certain that a topo model won't be helpful or necessary?
5. Where do I fit in? Are there some portions of any of the tasks that you need me to work on, or will I mostly be reviewing your work?
6. Go ahead and draft a similar proposal and schedule for the recreation analysis. Think about whether some of the recreation tasks can be coordinated with your visual resource work (like site visits). I'm attaching a 1/2 page document with some quick thoughts and some draft issue statements from our meeting this week.

Give me a call if you'd like to discuss any of this.

Thanks!

Debby



RosemontRecreationIssues.doc

"Marcie Bidwell" <mbidwell@swca.com>



"Marcie Bidwell"  
<mbidwell@swca.com>  
12/10/2008 08:34 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason"  
<tfurgason@swca.com>  
cc  
Subject Visual Proposal

Debbie,

Here is what I am thinking as a start for you to review and throw your ideas in on.

There are probably errors in here (spelling, etc) but it starts to put the pieces together.

Lets discuss!

Marcie <<Visual Proposal 2008-12-09.pdf>>

Marcie Demmy Bidwell  
Environmental Planner  
515 East College Avenue  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Visual Proposal 2008-12-09.pdf

## **Proposed Rosemont Mine Recreation Analysis**

Some thoughts from Debby Kriegel, December 12, 2008

### Key Components to Consider

- Dispersed recreation activities and opportunities (sightseeing, camping, birding, OHV, etc.).
- ROS settings.
- Trails (especially the Arizona Trail).
- Scenic Route 83.

### Issues

Implementation of the proposed action may/would result in...

1. direct loss of xx acres of land and xx miles of public roads to public recreation use during mine operations (20+ years).
2. adverse effects to quiet recreation settings and solitude near mine during mine operations.
3. conflicts between USFS recreation special use permittees and adverse effects to off-forest businesses during and after mine.
4. indirect effects from visitors who will recreate on other parts of the forest for recreation (impacts on other areas).
5. the continued trend toward loss of natural public lands for outdoor recreation in SE Arizona (cumulative effects)
6. a permanent change in recreation settings (ROS) and recreation opportunities in the project area after mining operations are complete.

Recommendation: Review public comments to identify other issues and/or modify above issue statements.

Debby Kriegel/R3/USDAFS  
05/07/2009 02:27 PM

To jlyndes@sagelandscape.com, kavid.krizek@tetrattech.com,  
Beverley A Everson/R3/USDAFS@FSNOTES,  
tfurgason@swca.com, mbidwell@swca.com, Salek  
cc Debby Kriegel/R3/USDAFS@FSNOTES

bcc

Subject Rosemont - Action Items from May 7 meeting

History:  This message has been forwarded.

Action items from the flipchart at today's meeting:

1. Meeting in 3 weeks (tentative date = morning of June 4th)
  - Progress meeting
  - Sage & Tetra Tech to provide modified proposed action: stormwater, reclamation plan, and visual work
  - USFS will provide Feedback
  - Sage will provide examples of other simulation projects
2. SWCA will provide Tetra Tech and Sage with (1) KOP GPS points ASAP, and (2) Evaluation Criteria and Affected Environment in 3 weeks
3. Tetra Tech will provide the USFS (Salek) and SWCA with new survey topo (2' contours) and oblique aerial photos by May 15
4. USFS will provide Tetra Tech and Sage with Concern Level 1 & 2 travelways by May 15
5. USFS will provide desired condition for project area by May 15

Thanks everyone!

Tom: Please forward this to Dale...I don't have his email address.

Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

know what I need to do?

Thanks!

(David: Please let me and Jonathan know if I missed something!)

~~~~~  
Debby Kriegel  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427

Debby Kriegel/R3/USDAFS  
02/12/2010 12:00 PM

To mbidwell@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont rock colors

Hi Marcie,

I just read the "Final Open Pit Wall Coloration" and "Waste Rock Material Characterization" reports. The pit report is clear...the most visible wall will be very light in color. If this rock is not treated with Permeon (or the equivalent) by year 10 (or not treated at all), your simulations will show light colors and the visual effects of the pit are huge.

The waste rock report is trickier. Will you apply the information in the tables geographically to various areas on the waste/tailings piles for simulations? I'm very unclear about the colors described in the report. "White" is obviously a problem visually, and "dark brown" sounds like a good color to mitigate visual impacts, but are things like "tan", "cream", and "light grey" a problem or not? Plus, many of the materials have colors that range from light to dark. Yikes.

I just left you a phone message. I can't remember whether you were going to ask for photos of the rock or if I needed to do something. Please let me know, and I can follow up next week. I'm leaving for the day shortly and am in training all day Tuesday, so I'm not going to be much help until Wed.

Have a good weekend. And thanks for your work on this project!!

Debby



"Marcie Bidwell"  
<mbidwell@swca.com>  
01/27/2010 01:19 AM

To "Kathy Arnold" <karnold@rosemontcopper.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>

cc

bcc

Subject RE: Visual Analysis Coordination Meeting

History:  This message has been replied to.

Hello Debby,

I would like to propose that we schedule the Visual Analysis Coordination Meeting for Friday morning, 9 AM at the USFS conference room at 300 Congress.

Will that schedule work for you and the facilities?

**Potential Attendees:**

Debby  
Kathy  
Tom  
Marcie  
David K and associates

Thank you!  
Marcie

**From:** Kathy Arnold [mailto:karnold@rosemontcopper.com]  
**Sent:** Tuesday, January 26, 2010 2:01 PM  
**To:** Marcie Bidwell; Debby Kriegel; Tom Furgason  
**Subject:** Re: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

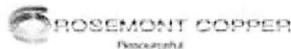
Marcie -

I have not heard from David (he is out this afternoon) but suspect that Friday earlier than later would be best. Do you have a time and location you were thinking of and we can firm up with David tomorrow?

Thanks -

Kathy

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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3031 West Ina Road | Tucson, AZ 85741 | [www.rosemontcopper.com](http://www.rosemontcopper.com)

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**From:** Marcie Bidwell <[mbidwell@swca.com](mailto:mbidwell@swca.com)>

**Date:** Tue, 26 Jan 2010 11:28:51 -0600

**To:** Katherine Arnold <[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>, Debby Kriegel <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>, Tom Furgason <[tfurgason@swca.com](mailto:tfurgason@swca.com)>

**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

Hello Kathy and Debby,

I am checking in to see if we have a date and time for the meeting this week, hopefully on Friday.

Thank you in advance for the update,  
Marcie

**From:** Kathy Arnold [<mailto:karnold@rosemontcopper.com>]

**Sent:** Friday, January 22, 2010 2:48 PM

**To:** Marcie Bidwell

**Subject:** Re: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

Thanks for coordinating Marcie – I just approved a meeting with Debby and will make sure David knows it is in his scope.

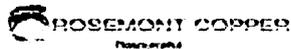
Cheers!

Kathy

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs

Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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**From:** Marcie Bidwell <[mbidwell@swca.com](mailto:mbidwell@swca.com)>

**Date:** Fri, 22 Jan 2010 13:55:39 -0600

**To:** David Krizek <[david.krizek@tetrattech.com](mailto:david.krizek@tetrattech.com)>

**Cc:** "Keepers, Ashley" <[Ashley.Keepers@tetrattech.com](mailto:Ashley.Keepers@tetrattech.com)>, Trent Reeder <[treeder@swca.com](mailto:treeder@swca.com)>, Katherine

Arnold <karnold@rosemontcopper.com>, Tom Furgason <tfurgason@swca.com>, Debby Kriegel <dkriegel@fs.fed.us>

**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

David,

I spoke with Debby regarding KOPs and the other information pieces. I am working on typing up the notes, but wanted to give you the most important pieces quickly, which will save you some time.

Most importantly, Debby was very interested to hear of the larger scope for Tetra Tech for all alternatives, and wants to schedule a meeting to finalize the details. She is supportive of Tetra Tech and Sage providing further materials and data, but wants to make sure that all of the effort is necessary prior to finished products arriving for approval. There may be opportunities for cost savings, and some of them are listed below. She will be requesting a face-to-face meeting for next week (hopefully Friday will work for everyone).

**FYI- IN TUCSON NEXT WEEK:** I am tentatively planning a trip to Tucson for next Thursday-Friday and I will be available for meetings on those days.

**1. KOP Consolidation-** She was appreciative and understanding of the desire to have one list. She was very comfortable with consolidating KOPs as proposed in principle, and I am checking a few details (i.e. exact location of TT photography) to see if it will work for the USFS as new KOPs (USFS- Box Canyon and Mt. Wrightson) and I am doing some research for decision on the USFS decision on AZ Trail. All other KOPs seem fine. The three in question are also probably fine, but I am checking the details to be sure.

**2. Legal Concern regarding Hilton Road KOP and sharing it:** As the USFS is just supplying the gps for this point, Debby was comfortable with TT using it for viewshed analysis. You can proceed with this KOP.

**3. How many Viewshed Analysis- all KOPs or less?** With an appreciation for the amount of work that is involved (and associated costs), we discussed if viewsheds were necessary for all of the KOPs that are on the "short list" (the consolidated 8). Debby is comfortable with only doing viewshed analyses for less than all 8. For the purposes of the USFS and their methods, the KOPs within the USFS "middleground" or closer to the project area are the most important (basically within 5 miles), so the list could be shortened. I am working on that list, but you can count on KOP 1-3, 7 and 8 remaining on the list. Mt. Wrightson is definitely off of the list.

**4. Presentation of KOPs Viewshed Analysis-** We decided that the best way to present the viewshed analysis is to have the final product to be **one final map that adds all of the KOP results together**. That reduces the maps to (1) per alternative, a total of 6 maps + No Action= 7 maps total (which is better than 48). However, they will need to be in color to work in this format. I will send directions in a separate email.

I think that's the most important pieces for now. More to follow this afternoon,  
Thank you again for the data and we hope to have our data on line for you by Monday (our office is closed due to winter storm)

Marcie

**From:** Krizek, David [<mailto:David.Krizek@tetrattech.com>]  
**Sent:** Friday, January 22, 2010 9:38 AM  
**To:** Marcie Bidwell  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

*Marcie,*

*Would it also be possible to present the viewshed analyses in black and white to reduce copy charges?*

*It was a question from RCC.*

*Sincerely,*

**David Krizek | Principal**  
Main: 520-297-7723 | Mobile: 520-260-3490 | Fax: 520-297-7724

*Tetra Tech*  
3031 West Ina Road | Tucson, AZ 85741 | [www.tetrattech.com](http://www.tetrattech.com) <<http://www.tetrattech.com>>

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**From:** Marcie Bidwell [<mailto:mbidwell@swca.com>]  
**Sent:** Friday, January 22, 2010 9:33 AM  
**To:** Krizek, David  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** RE: Tetra Tech Viewshed and KOPS - previous analysis - descriptions

*Thanks!*

*It may be Monday before all of our stuff is uploaded. Our office is closed today due to snow and our GIS team need to be on the server to upload stuff. It may happen over the weekend.*

*I am talking to Debby today regarding the viewshed presentation questions. I should have answers for you later.*

*Marcie*

**From:** Krizek, David [<mailto:David.Krizek@tetrattech.com>]

**Sent:** Friday, January 22, 2010 9:31 AM  
**To:** Marcie Bidwell  
**Cc:** Keepers, Ashley; Trent Reeder  
**Subject:** Tetra Tech Viewshed and KOPS - previous analysis - descriptions  
Marcie,

*I have loaded to the ftp site the photos for the KOPs and other information related to KOP selection, etc. I also included the viewshed analysis that we did previously (pdf versions).*

*Sincerely,*

**David Krizek | Principal**

Main: 520-297-7723 | Mobile: 520-260-3490 | Fax: 520-297-7724

*Tetra Tech*

3031 West Ina Road | Tucson, AZ 85741 | www.tetrattech.com <<http://www.tetrattech.com>>

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Debby Kriegel/R3/USDAFS  
08/20/2009 07:29 AM

To mbidwell@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES, Mary M  
Farrell/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont Mine

Marcie: This afternoon I'll be attending a meeting with the ~20 project cooperators (tribes, other agencies, local governments, etc.). In preparation, I thought about what I'd say if any of the cooperators asked me to summarize my thoughts on the project impacts and alternatives related to scenery (and recreation setting), and I jotted this down. However, something like this might also be useful as an introduction for the environmental consequences section for scenery. See what you think. Thanks! Debby

### **Proposed Rosemont Mine - Visual Resources Summary August 20, 2009**

**It is difficult to imagine a land use that would be more potentially devastating to the valued National Forest scenery and quiet wildland recreation settings than the proposed mine. The project would clear or bury most of the native vegetation in the area (including mature trees along the numerous canyon bottoms), change landforms from natural undulating topography to monolithic flat-topped industrial shapes, and create a very large open pit high on a mountainside in a location where it will be visible from miles away. The project would also require many "temporary" facilities that would be in operation 24/7 for 20 years or more, including an ore processing complex, access and haul roads, and power and water lines.**

**Alternatives and mitigation that would help lessen these impacts include:**

- 1. Shaping the waste rock and tailings piles to mimic natural landforms in the surrounding area.**
- 2. Placing waste rock and tailings in locations that are less visible to Forest visitors and nearby residents.**
- 3. Establishing native vegetation in natural patterns and sizes on all disturbed areas as quickly as possible.**
- 4. Treating the visible portions of the pit to remove artificial forms (such as horizontal ledges) and darken the rock to match adjacent exposed native rock.**
- 5. Removing facilities as soon as they are not needed, and naturalizing these areas by restoring contours and planting with native species.**

Debby Kriegel/R3/USDAFS  
07/08/2009 04:54 PM

To "Trent Reeder" <treeder@swca.com>, "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont - New information and a change in Monday's meeting...

Marcie and Trent,

I just got out of the Rosemont meeting. The team eliminated alternatives 4 and 5 (though I want to review them one more time with you two, just in case either has serious merit), and came up with a new alternative that places all waste and tailings in Barrel Canyon (and avoids McCleary Canyon entirely). This new options will add height and/or width to the proposed pile in this location and will probably push it closer to Hwy 83. Rosemont will create a drawing that shows the footprint and elevation for this new alternative, and it will be presented to the ID team Wednesday morning. I'd like to have ALL the alternatives in the model before we meet, so let's postpone Monday's session. Trent would need to add the new "blob" to the model. Are you two available on Wednesday? Trent: if you have the data late Wed morning, could you add it to the model in a couple of hours so me and Marcie could work with you in the afternoon?

Marcie: There are several issues that we need to discuss soon. I'm in a meeting all day tomorrow. Are you available Friday or Monday to talk about these?

1. Have you and Trent had already identified the new KOP locations we discussed recently (Tucson, I-19 dogleg, etc.)? Today the visibility of Sycamore Canyon from Tucson came up, so we will need KOP locations for that clearly demonstrate what would be seen.
2. Bev recommends that we add a KOP in Vail (a community on the southeast edge of metro Tucson).
3. When will you have the scope of work for me to approve? (the one that Charles Coyle mentioned a couple of weeks ago)
4. Do you have a tentative schedule for your work that ensures everything can be completed by November (when the draft EIS is due)?

~~~~~  
Debby Kriegel  
Coronado National Forest  
(520) 388-8427



"Marcie Bidwell"  
<mbidwell@swca.com>  
09/15/2009 01:23 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject BLM VRM

[www.blm.gov/nstc/VRM](http://www.blm.gov/nstc/VRM)  
<<Garkane DLH 11-11-08.doc>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Garkane DLH 11-11-08.doc

↑ Not printed.  
Example from non-mining  
project on lands in Utah

Debby Kriegel/R3/USDAFS  
08/03/2010 03:28 PM

To cbarraza@rosemontcopper.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont Plant - Building Colors

History:  This message has been forwarded.

Clarissa,

Were you able to get a color sample for Patrician Bronze?

Also, on July 23, Kathy Arnold mentioned that the Forest Service could not identify a specific color for the buildings (like Patrician Bronze), but that we could identify a ballpark color or color range. Do you have any recommendations on how we could do this, so your specifications would allow a variety of suppliers to bid on the job? What type of color system(s) should we be considering/specifying?

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

----- Forwarded by Debby Kriegel/R3/USDAFS on 08/03/2010 03:22 PM -----



**Katherine Arnold**  
<[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)>  
07/16/2010 12:24 PM

To Clarissa Barraza <[cbarraza@rosemontcopper.com](mailto:cbarraza@rosemontcopper.com)>, Debby Kriegel <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc Marcie Bidwell <[mbidwell@swca.com](mailto:mbidwell@swca.com)>, David Krizek <[david.krizek@tetrattech.com](mailto:david.krizek@tetrattech.com)>  
Subject Hello

Clarissa – meet Debby and Marcie  
Marcie and Debby – this is Clarissa

Clarissa -

Marcie and Debby are working on the building color schemes that would be best so the buildings blend into the background. I told them that you are the keeper of the keys to the details of our EPCM contracts and that you could chat with them regarding the color limitations and specifications. Please expect a call from either Debby or Marcie or both to chat about:

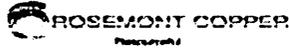
1. Color of the overall buildings – they got the color information you provided but wondered if they could have a choice
2. Possibly setting a color specification for the buildings so that regardless of manufacturer we are

- purchasing the colors that are most desirable.
3. Other items as necessary

Let me know if you have questions or concerns.

**Kathy**

**Katherine Ann Arnold, P.E.** | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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```
begin:vcard
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n; charset=utf-8:Barraza;Clarissa;;;
adr; charset=utf-8; type=work; type=pref;;; PO Box 35130; Tucson; AZ; 85740-5130;
label; charset=utf-8; type=work; type=pref: PO Box 35130\nTucson\, AZ
85740-5130
tel; charset=utf-8; type=work: (520) 293-1488 ext 7370
tel; charset=utf-8; type=cell: (520) 310-1404
email; charset=utf-8; type=internet; type=pref; type=work: cbarraza@rosemontcopper.com
end:vcard
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n; charset=utf-8:Bidwell;Marcie;;;
title; charset=utf-8:Environmental Planner
org; charset=utf-8:SWCA Environmental Consultants;
url; charset=utf-8; type=work: www.swca.com
adr; charset=utf-8; type=work; type=pref;;; 515 East College
Drive; Durango; CO; 81301; United States
label; charset=utf-8; type=work; type=pref: 515 East College Drive\nDurango\,
CO 81301\nUnited States
tel; charset=utf-8; type=work: (970) 385-8566
tel; charset=utf-8; type=work; type=fax: (970) 385-1938
```

email; charset=utf-8; type=internet; type=pref; type=other:mbidwell@swca.com  
end:vcard

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prodid:Microsoft-Entourage/12.25.0.100505  
UID:472BA63C-9937-4A6B-B1AF-528E87BC62B6  
fn; charset=utf-8:Debby Kriegel  
n; charset=utf-8:Kriegel; Debby;;;  
org; charset=utf-8:US. Forest Service; Coronado National Forest  
adr; charset=utf-8; type=work; type=pref;;; 300 West  
Congress; Tucson; AZ; 85701; USA  
label; charset=utf-8; type=work; type=pref:300 West Congress\nTucson\, AZ  
85701\nUSA  
email; charset=utf-8; type=internet; type=pref; type=work:dkriegel@fs.fed.us  
end:vcard



Reta Laford/R3/USDAFS  
08/06/2009 05:33 PM

To ccoyle@swca.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES, Reta  
Laford/R3/USDAFS@FSNOTES  
bcc  
Subject Coronado Approval of SOW -Fw: Rosemont visual  
simulations scope of work

**Charles** - See Debby's note below. She validates that the attached scope of work reflects the analysis she has requested on the proposed action. She also notes that although your email uses the word "definitive", there is always some level of uncertainty with any proposed analysis. Please proceed with the attached scope of work. Thank you.

Reta Laford, Deputy Forest Supervisor

USDA Forest Service, Coronado National Forest  
300 W Congress Street, Tucson, AZ 85701

Phone: 520-388-8307 (office), 505-452-7557 (cell)  
Fax: 520-388-8305  
Email: rlaford@fs.fed.us

-----  
----- Forwarded by Reta Laford/R3/USDAFS on 08/06/2009 05:27 PM -----

Debby Kriegel/R3/USDAFS  
08/06/2009 06:59 AM

To Reta Laford/R3/USDAFS@FSNOTES  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
Subject Fw: Rosemont visual simulations scope of work

Reta:

This is the scope of work for simulations that I recommend for the proposed action, and I approve moving forward with this. Please review this and contact SWCA as soon as possible.

One note of caution...

Charles mentions the words "definitive scope". Although the proposed work includes much thought and discussion and is relatively "definitive", until SWCA delves into this process, we can't be completely certain that there won't be an unexpected bump in the road. I assume that Marcie's cost estimate for this work includes a modest amount of contingency for these uncertainties. Her assumptions here clearly mention some of the tasks that may need additional work/funds.

-----  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
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dkriegel@fs.fed.us

----- Forwarded by Debby Kriegel/R3/USDAFS on 08/06/2009 06:46 AM -----



**Beverley A  
Everson/R3/USDAFS**  
08/05/2009 04:24 PM

To Reta Laford/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
cc

Subject Fw: Rosemont visual simulations scope of work

I defer to the two of you in approving this scope of work, as you discussed it in detail prior to submitting it to SWCA.

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

----- Forwarded by Beverley A Everson/R3/USDAFS on 08/05/2009 04:23 PM -----



**"Charles Coyle"**  
<ccoyle@swca.com>  
08/05/2009 03:56 PM

To "Beverley A Everson" <beverson@fs.fed.us>, "Reta Laford" <rlaford@fs.fed.us>, "Debby Kriegel" <dkriegel@fs.fed.us>  
cc "Marcie Bidwell" <mbidwell@swca.com>, "Tom Furgason" <tfurgason@swca.com>  
Subject Rosemont visual simulations scope of work

Hi Bev, Reta, Debby:

Please review the attached, which is Marcie Bidwell's revised scope of work and assumptions to complete visual simulations for the Proposed Action. As I understand it, this newest version was coordinated with Debby yesterday and this morning.

As we discussed, it would be best if we can get approval from each of the three of you prior to submittal of the scope and associated costs to Rosemont Copper—change orders tend to be quite time-consuming, so I'd like to be able to assure RCC this is the definitive scope and we can then hopefully get the dollars in place sooner rather than later.

Thanks!

Charles Coyle  
Senior Project Manager  
SWCA Environmental Consultants  
3033 North Central Ave., Suite 145  
Phoenix, AZ 85012

Phone: 602-274-3831 ext 1108  
Fax: 602-274-3958  
[www.swca.com](http://www.swca.com)

***Sound Science. Creative Solutions.***



Visual Simulations Scope of Work 8-05-09.pdf

## **Visual Simulations Change Order (Aug. 5, 2009)**

### **Visual Simulations: Highly Visible, Moderately Visible and Not Visible Diagrams**

#### **Task 1. Consultation with USFS and Rosemont to Select Simulations and Phases**

*Review all KOPs established by the USFS and select key observation points (KOPs) to propose to USFS for simulations and level of detail for simulations to show areas where the project is highly visible, distantly visible, and not visible (i.e., blocked or out of view).*

*Prepare "existing conditions" panoramas for potential KOP simulations and review for use as simulations. For KOPs where project would be visible, select a phase to represent for each KOP in addition to Reclamation (e.g., construction at 5 years).*

*Meet with USFS and RCC to review data, KOP selection and "photo-realistic" process.*

#### **Task 2. 3D Surface and Scene Construction**

*Collect necessary data and generate 3D digital surfaces for the MPO at each construction phase selected for simulations.*

*Create one set of 3D GIS Arc Globe working maps and diagrams. Construct 3D working diagrams for RCC and USFS to review potential scenes from each KOP to be selected.*

*Review with USFS and RCC for proposed simulations (i.e., does the KOP portray a scene which is representative of desired viewshed and phase of construction for visual analysis?)*

#### **Task 3. Visual Simulations Construction and Review with USFS/RCC**

*Create photo-realistic computer simulations of MPO for selected KOPs for highly visible and distantly visible locations. For highly visible and moderately visible KOPs, prepare simulations to show two phases of the MPO for each KOP (e.g., during construction and at final reclamation). Each simulation will show waste rock and tailing pile forms, roads, and infrastructure.*

*For KOPs where development per the MPO would not be visible, prepare a section diagram or labeled panorama showing key landscape features and visual screen.*

*Prepare photorealistic simulation images for KOPs.*

*Review draft simulations with resources specialists from RCC, USFS, and SWCA to direct specific aspects of renderings: reclamation, soils, vegetation, etc.*

*Complete a Draft review with USFS and RCC staff at a meeting in Tucson.*

#### **Task 4. Photo Simulation Finalization**

*Complete changes to simulations and submit to USFS and RCC for final approval.*

## **Assumptions**

- 1** *Costs are based upon up to 14 KOPs for up to 14 panoramas, 6 labeled diagrams showing landform screening for non-visible KOPs, and up to 16 simulations of highly visible and moderately visible KOPs for the Proposed Action. Additional KOPs, simulations, phases, or alternatives may be requested for an additional fee.*
- 2** *RCC to provide all data and elevations required for simulations, including a 3D model of any facilities, structures, or transmission infrastructure.*
- 3** *Simulations will be classified as "highly visible" or "moderately visible". Highly visible simulations will show detailed variations in land form, vegetation, color, and texture for tailings and waste rock placement. Moderately visible simulations will show general variations in land form, vegetation, color and texture due to the level of detail being reduced by the distance of the viewer from the project area.*
- 4** *Should KOPs require extensive visualization of mining facilities, conveyors, equipment, transmission lines, etc, the work for these layers will be performed on a time-and-materials basis, due to the unpredictable level of detail and effort required for these structures.*
- 5** *RCC and USFS are to agree upon the level of reclamation and vegetation success to be rendered prior to initiation of photoreal simulations. Changes in the direction given to SWCA to represent these aspects will require a change order, should they require additional time and effort to address.*
- 6** *RCC will provide example photographs of existing reclamation, mining structures, vegetation mixes, soil types and colors, and other data to SWCA prior to the initiation of the simulations. Necessary imagery will be discussed at simulation initiation meeting in Task 1.*
- 7** *Changes in data, proposed action, and resolution of imagery after project initiation will require adjustments based upon time and materials.*
- 8** *Cost estimate includes two in-person meetings as two trips to Tucson for Marcie Bidwell to work with USFS and RCC on simulations, per direction of USFS staff. Additional trips may be required by USFS or RCC, and these will be arranged through an additional change order.*
- 9** *This scope of work includes one round of draft review and one round of final review. Additional changes, reviews, or updates would require an approved change order.*

**Minimum Simulations Needed for Rosemont EIS – Proposed Action**  
July 30, 2009

Confirm that proposed action is not visible - No simulations needed

- Madera Canyon
- San Xavier
- Tucson
- Vail
- Corona de Tucson
- Sahuarita
- Green Valley

Project effects small and/or distant - Simulate year with most effects (2 simulations)

- Sonoita (KOP 8)
- Las Cienegas Conservation Area (KOP 11)

Project effects moderate – Simulate year with most visible effects, and post-reclamation if view expected to be much different from existing view (3-6 simulations)

- Mt. Wrightson Wilderness (KOP 17)
- Hilton Rd. (KOP 16)
- Box Canyon (KOP 21)

Project effects large – Simulate as follows (7-8 simulations)

- Arizona Trail – 1 simulation of typical view along trail at the toe of the waste rock
- Hwy 83 pullout (KOP 12) - Simulate 2-3 phases (construction or early mine years, during active mine with most visible effects if it's different than the construction or early mine simulation, and post reclamation)
- OHV staging area at KOP 4 - Simulate 3 phases (construction or early mine years, during active mine with most visible effects, and post reclamation)

## TOTAL 12-16 SIMULATIONS

| Simulation Type                                                                                                                                                                                                       | Simulation Description                                                                                                                                                                                                                                                                                                                                 | Number of Panoramas     | Number of Simulations     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------|
| <b>Not Visible</b> <ul style="list-style-type: none"> <li>• Madera Canyon</li> <li>• San Xavier</li> <li>• Tucson</li> <li>• Vail</li> <li>• Corona de Tucson</li> <li>• Sahuarita</li> <li>• Green Valley</li> </ul> | <ul style="list-style-type: none"> <li>○ Six existing panoramas of conditions</li> <li>○ Six diagrams to document project is not visible</li> </ul>                                                                                                                                                                                                    | 6                       | 0                         |
| <b>Minimal- Distant Visibility</b> <ul style="list-style-type: none"> <li>• Sonoita (KOP 8)</li> <li>• Las Cienegas Conservation Area (KOP 11)</li> </ul>                                                             | <ul style="list-style-type: none"> <li>○ Three existing panoramas of current conditions</li> <li>○ Three general simulations with generalized colors and textures</li> </ul>                                                                                                                                                                           | 2                       | 2                         |
| <b>Moderate Visibility</b> <ul style="list-style-type: none"> <li>• Mt. Wrightson Wilderness (KOP 17)</li> <li>• Hilton Rd. (KOP 16)</li> <li>• Box Canyon (KOP 21)</li> </ul>                                        | <ul style="list-style-type: none"> <li>○ Three existing panoramas of current conditions</li> <li>○ Three post-reclamation with detail in color and texture that fades with distance from viewer</li> <li>○ Two to six simulations at phases during construction with detail in color and texture that fades.</li> </ul>                                | 3                       | 6                         |
| <b>Highly Visible</b> <ul style="list-style-type: none"> <li>• Arizona Trail</li> <li>• Hwy 83 pullout (KOP 12)</li> <li>• OHV staging (KOP 4)</li> </ul>                                                             | <ul style="list-style-type: none"> <li>○ Three existing panorama of current conditions</li> <li>○ Three post-reclamation simulations with high level of detail in vegetation, color, texture and land form that fades with distance from the viewer during different phases</li> <li>○ Two to six simulations at phases during construction</li> </ul> | 3                       | 8                         |
| <b>Totals</b>                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                        | <b>14<br/>Panoramas</b> | <b>16<br/>Simulations</b> |



"Marcie Bidwell"  
<mbidwell@swca.com>  
08/13/2009 02:21 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject Simulation Strategy table

<<Simulation\_Strategy\_Proposed\_Action\_09-08-10.doc>>

Marcie Demmy Bidwell  
Environmental Planner  
130 Rock Point Drive, Suite A  
Durango, Colorado 81301  
Office: 970.385.8566  
Fax: 970.385.1938



[www.swca.com](http://www.swca.com) Simulation\_Strategy\_Proposed\_Action\_09-08-10.doc

**Minimum Simulations Needed for Rosemont EIS – Proposed Action**  
Requested List of Simulations by the Coronado National Forest

Confirm that proposed action is not visible - No simulations needed

- Madera Canyon
- San Xavier
- Tucson
- Vail
- Corona de Tucson
- Sahuarita
- Green Valley

Project effects small and/or distant - Simulate year with most effects (2 simulations)

- Sonoita (KOP 8)
- Las Cienegas Conservation Area (KOP 11)

Project effects moderate – Simulate year with most visible effects, and post-reclamation if view expected to be much different from existing view (3-6 simulations)

- Mt. Wrightson Wilderness (KOP 17)
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- Box Canyon (KOP 21)

Project effects large – Simulate as follows (7-8 simulations)

- Arizona Trail – 1 simulation of typical view along trail at the toe of the waste rock
- Hwy 83 pullout (KOP 12) - Simulate 2-3 phases (construction or early mine years, during active mine with most visible effects if it's different than the construction or early mine simulation, and post reclamation)
- OHV staging area at KOP 4 - Simulate 3 phases (construction or early mine years, during active mine with most visible effects, and post reclamation)

**SWCA PROPOSED DELIVERABLES FOR VISUAL EXHIBITS AND SIMULATIONS STRATEGY**

| Simulation Type                                                                                                                                                                                                                                        | Simulation Description                                                                                                                                                                                                                                                                                                                                                     | Number of Preview PDFs  | New KOP Photography        | Number of Panoramas                       | Number of Non-visible Diagrams                   | Number of Simulations                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------|-------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| <b>Not Visible</b> <ul style="list-style-type: none"> <li>• Madera Canyon (KOP 2)</li> <li>• San Xavier (KOP 16)</li> <li>• Tucson</li> <li>• Vail</li> <li>• Corona de Tucson (KOP 3)</li> <li>• Sahuarita</li> <li>• Green Valley (KOP 2)</li> </ul> | <ul style="list-style-type: none"> <li>○ Six existing panoramas of conditions</li> <li>○ Six diagrams to document project is not visible</li> </ul>                                                                                                                                                                                                                        | 6                       | 3                          | 6                                         | 6                                                | 0                                                |
| <b>Minimal- Distant Visibility</b> <ul style="list-style-type: none"> <li>• Sonoita (KOP 8)</li> <li>• Las Cienegas Conservation Area (KOP 11)</li> </ul>                                                                                              | <ul style="list-style-type: none"> <li>○ Three existing panoramas of current conditions</li> <li>○ Three general simulations with generalized colors and textures</li> </ul>                                                                                                                                                                                               | 2                       | 0                          | 2                                         | 0                                                | 2                                                |
| <b>Moderate Visibility</b> <ul style="list-style-type: none"> <li>• Mt. Wrightson Wilderness (KOP 17)</li> <li>• Hilton Rd. (KOP 16)</li> <li>• Box Canyon (KOP 21)</li> </ul>                                                                         | <ul style="list-style-type: none"> <li>○ Three existing panoramas of current conditions</li> <li>○ Three post-reclamation with detail in color and texture that fades with distance from viewer</li> <li>○ Two to six simulations at phases during construction with detail in color and texture that fades.</li> </ul>                                                    | 6 - 12                  | 3                          | 3                                         | 0                                                | 6                                                |
| <b>Highly Visible</b> <ul style="list-style-type: none"> <li>• Arizona Trail (KOP 5 - 7, or 13)</li> <li>• Hwy 83 pullout (KOP 12)</li> <li>• OHV staging (KOP 14)</li> </ul>                                                                          | <ul style="list-style-type: none"> <li>○ Three existing panorama of current conditions</li> <li>○ Three post-reclamation simulations with high level of detail in vegetation, color, texture and land form that fades with distance from the viewer during different phases during construction</li> <li>○ Two to six simulations at phases during construction</li> </ul> | 6-12                    | 0                          | 3                                         | 0                                                | 8                                                |
| <b>Total Deliverables</b>                                                                                                                                                                                                                              | <b>Drafts</b>                                                                                                                                                                                                                                                                                                                                                              | <b>20 - 32 PDFs</b>     | <b>6 New KOPs</b>          | <b>14 Panoramas</b>                       | <b>6 Draft Diagrams</b>                          | <b>16 Draft Simulations</b>                      |
|                                                                                                                                                                                                                                                        | <b>Final</b>                                                                                                                                                                                                                                                                                                                                                               |                         |                            |                                           | <b>6 Final Diagrams</b>                          | <b>16 Final Simulations</b>                      |
|                                                                                                                                                                                                                                                        | <b>Meetings</b>                                                                                                                                                                                                                                                                                                                                                            | <b>(1) 4-hr Meeting</b> | <b>(2) Days Field Work</b> | <b>(1)- Review of 3D Surfaces Meeting</b> | <b>(1)- Review Draft Figures and Simulations</b> | <b>(1)- Review Final Figures and Simulations</b> |



Melinda D Roth/R3/USDAFS  
07/29/2010 08:42 AM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc tjchute@msn.com, mbidwell@swca.com  
bcc  
Subject Re: Fw: Rereading of Chapter 2, what are your thoughts?

Terry is our point person on mitigation measures. He is reviewing the mitigation table this week. Many of our "mitigation measures" fit better as alternative design features and Terry is identifying which is which. I believe Terry is also consolidating like ideas to reduce redundancy, etc. Terry will then work with Tom at SWCA to incorporate all these ideas into Chapter 2.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
07/29/2010 08:27 AM

To Melinda D Roth/R3/USDAFS@FSNOTES, tjchute@msn.com  
cc Debby Kriegel/R3/USDAFS@FSNOTES,  
mbidwell@swca.com  
Subject Fw: Rereading of Chapter 2, what are your thoughts?

Mindee and Terry:

I haven't had a chance to read chapter 2 lately, but Marcie just did, and she's pointing out that the mitigation table still states that Rosemont intends to landform, fully revegetate (including planting trees and shrubs), and treat the light-colored pit rock. These are the most important 3 mitigation measures for visual quality, and Rosemont agreed to them long ago, but they have not yet provided sufficient support/research to incorporate them in the DEIS (or show in the simulations). All could easily be resolved by the FEIS. Also, there has been some wordsmithing on these mitigation measures that I have problems with.

What do you suggest?

----- Forwarded by Debby Kriegel/R3/USDAFS on 07/29/2010 08:15 AM -----



"Marcie Bidwell"  
<mbidwell@swca.com>  
07/29/2010 06:49 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
Subject Rereading of Chapter 2, what are your thoughts?

Hello Debby,

Under the mitigation section of Chapter 2 is this section I am pasting below that caught my eye.

Is this accurate and up to date? I am not buying it, basically. I suspect that you don't either.

Thoughts on what Chapter 2 should say?

Marcie

## **Visual Resources**

Rosemont Copper would finalize a comprehensive plan to mitigate visual impacts. This plan would incorporate information gained during on-sight studies conducted independently to determine the effectiveness of a variety of growth media and plant pallets. The plan would be subject to approval by Coronado's Landscape Architect and would, at a minimum incorporate the "Diverse Habitat Mosaic Reclamation Approach". This would require an adaptive management approach and include a variety of surface treatments, varying slope lengths, and angles with less prescriptive water management techniques.

Some of the additional considerations include re-establishing drainage areas that integrate talus slopes, rocky outcrops, trees, and riparian characteristics. While grasslands with forbs and shrubs would be the predominant plant community, other existing plant communities would also be re-established at selected locations on-site. These communities will include agave, a variety of trees, ocotillo, and shrubs. Plantings and seeding would be implemented to mimic the existing mosaic of vegetation to provide diversity to the visual landscape. All plantings, seed mixes, and their suppliers would be approved by Coronado prior to planting. Variations of the drainage versus upland areas would also be worked into the design such that the prescriptive ridge and drainage considerations would be augmented by other treatments to provide a more variable landform.

Portions of the Pit Wall and road cuts visible from Key Observation Points would be painted, stained, or vegetated according to the plan. All paints or stains would be approved by Coronado prior to use. All buildings and other major project features would be painted with non-reflective, earth-tone paints, as approved by the Forest Service. Treatments to light fixtures have been covered under Night Skies.

At the end of mine operations, remove all unneeded ore processing, ancillary facilities (including foundations), and utility lines, and naturalize these sites by restoring natural contours, placing growth media on the areas, and revegetating with native grasses, trees, and shrubs.

Marcie Demmy Bidwell

Environmental Planner

130 Rock Point Drive, Suite A

Durango, Colorado 81301

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Fax: 970.385.1938

[www.swca.com](http://www.swca.com)



"Marcie Bidwell"  
<mbidwell@swca.com>  
12/17/2009 05:31 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Trent Reeder"  
<treeder@swca.com>, "Dale Ortman"  
<daleortmanpe@live.com>  
cc "Tom Furgason" <tfurgason@swca.com>  
bcc  
Subject Data Needed from Rosemont - Rocks and plants

Debby,

Here are some thoughts for information request to Rosemont~

1. We need GIS layers for the new alternatives (revised Phased Tailings, and Barrel Only) with Zvalues assigned to the contours and georeferences to their locations (it is my understanding that the latest alternatives as designed by Rosemont has not been delivered as contours to SWCA).
2. 3D model of the plant facilities and infrastructure locations (powerline, waterline easement, etc), with detail to the point that USFS and Rosemont can agree is sufficient for simulations. These need to be georeferenced as well.
3. Contours- best resolution of the existing landform topo that Tetra Tech has. We are still working off of 10m DEMs.

Dale,  
Did you say that you received 2ft contours for the engineer?

If so, Trent and I need a copy of that data.

Thanks!  
Marcie

**From:** Trent Reeder  
**Sent:** Thursday, December 17, 2009 10:01 AM  
**To:** Marcie Bidwell  
**Subject:** RE: Data Needed from Rosemont - Rocks and plants

For the GIS layers, let's make sure we get data with elevations. Regarding 3D models, we need some sort XYZ georeferencing numbers and locations. We need to know where to place the model(s) and the base elevation(s).

That's about it at this point.

T  
**From:** Marcie Bidwell  
**Sent:** Thursday, December 17, 2009 9:52 AM  
**To:** Trent Reeder  
**Subject:** RE: Data Needed from Rosemont - Rocks and plants

Debby,

Here are some thoughts~

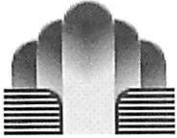
1. We need GIS layers for the new alternatives (revised Phased Tailings, xxx)
2. We need a 3D model of the plant facilities, at least to the point that USFS and Rosemont can agree is sufficient for simulations.

**Trent, can you think of anything else that we should include in this request?**

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Tuesday, December 15, 2009 3:22 PM  
**To:** Marcie Bidwell; Walter Keyes; Salek Shafiqullah  
**Cc:** Debby Kriegel  
**Subject:** Data Needed from Rosemont - Rocks and plants

**I'm getting ready to formally request the following information from Rosemont, and would appreciate your comments...**

1. Information about the appearance of the outermost waste rock (sometimes referred to as "growth medium" or "topsoil") and visible back parts of the pit. This data will be necessary for both analysis of visual resources and for creating accurate simulations. Information needed:
  - The color range of the rock types that will comprise the outermost waste rock. This could be as simple as providing samples of the rock, identifying field sites where the material can be viewed (such as on the test plots), and photographs.
  - Permeon tests to determine application rates for the back of the pit, and outermost waste rock if it will be lighter than surrounding landscape colors. The Permeon representative is in the Tucson area approx. once each month. If Rosemont could provide locations to test the correct rock types (which should be newly excavated rock, not weathered locations), he is willing to travel to the site to test various application rates.
  - Post-mine options for breaking up the uppermost horizontal benches in the back of the pit. Depending on alternative, up to 20 benches would be visible from travelways, including Highway 83.
2. A study of establishing trees and shrubs on reclaimed slopes. The current research on seeding is an excellent start, but reclamation should also include trees and shrubs (and possibly cacti) in order to more quickly stabilize the slopes and meet visual quality goals. Coordination with U of A's Dr. Fehmi would be a good place to start, and perhaps he could recommend a consultant. The study would answer the following questions:
  - Which species and sizes of plants would be most successful on the outermost material? Native plants should be selected from those currently growing at the site, and would include salvage/transplants, seedlings, and/or container plants. Patterns of plants on the new slopes should mimic those of the surrounding landscape.
  - Where can the needed plants be obtained in sizes and quantities that would likely be necessary? Options include salvaging from the site, purchasing from local nurseries, contracting propagation, or some combination. Landforming work will affect the exact quantities, but a rough examination of existing numbers of plants and species per acre in the area would provide a good starting point. And I know of one local plant expert with a nursery who might be available to provide information on the success of propagating species not typically sold in nurseries and/or to could help propagate plants.



Walter Keyes/R3/USDAFS

12/17/2009 01:09 PM

To Debby Kriegel/R3/USDAFS@FSNOTES

cc Debby Kriegel/R3/USDAFS@FSNOTES,  
mbidwell@swca.com, Salek  
Shafiqullah/R3/USDAFS@FSNOTES

bcc

Subject Re: Data Needed from Rosemont - Rocks and plants

Debby,

Good writeup, logic and needs description.

Suggestion for #2 below; an additional bullet (now or later) might be in order. Namely, if there are different suites of native plants best adapted to different "growth mediums", a plan should be developed to place that material/plant or seed those suites of veg to achieve targeted reveg and biology needs. Specifically I'm thinking of Agave/bat concerns, but this applies to lots of plant species/obligates. An example of how it can go wrong inadvertently would be that if a "growth medium" which is best for Agave survival is placed on slopes which are not conducive to Agave survival (north facing, south facing, whatever), we all have missed a huge opportunity. Resolving what "growth medium" goes where--for visual AND plant growth needs--solves problems for the proponent and the land manager.

Walt.

.....  
Walt Keyes -- Roads Engineer  
Coronado National Forest  
300 W. Congress, Tucson, AZ 85701  
520-388-8416 voice / 260-9567 cell / 388-8334 fax / wkeyes@fs.fed.us

This email contains information known to the State of  
California to cause lack of reproductive success in the recipient.

.....  
Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS

12/15/2009 03:22 PM

To mbidwell@swca.com, Walter  
Keyes/R3/USDAFS@FSNOTES, Salek  
Shafiqullah/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES

Subject Data Needed from Rosemont - Rocks and plants

**I'm getting ready to formally request the following information from Rosemont, and would appreciate your comments...**

1. Information about the appearance of the outermost waste rock (sometimes referred to as "growth medium" or "topsoil") and visible back parts of the pit. This data will be necessary for both analysis of visual resources and for creating accurate simulations. Information needed:

- The color range of the rock types that will comprise the outermost waste rock. This could be as simple as providing samples of the rock, identifying field sites where the material can be viewed (such as on the test plots), and photographs.

- Permeon tests to determine application rates for the back of the pit, and outermost waste rock if it will be lighter than surrounding landscape colors. The Permeon representative is in the Tucson area approx. once each month. If Rosemont could provide locations to test the correct rock types (which should be newly excavated rock, not weathered locations), he is willing to travel to the site to test various

application rates.

- Post-mine options for breaking up the uppermost horizontal benches in the back of the pit. Depending on alternative, up to 20 benches would be visible from travelways, including Highway 83.

2. A study of establishing trees and shrubs on reclaimed slopes. The current research on seeding is an excellent start, but reclamation should also include trees and shrubs (and possibly cacti) in order to more quickly stabilize the slopes and meet visual quality goals. Coordination with U of A's Dr. Fehmi would be a good place to start, and perhaps he could recommend a consultant. The study would answer the following questions:

- Which species and sizes of plants would be most successful on the outermost material? Native plants should be selected from those currently growing at the site, and would include salvage/transplants, seedlings, and/or container plants. Patterns of plants on the new slopes should mimic those of the surrounding landscape.

- Where can the needed plants be obtained in sizes and quantities that would likely be necessary? Options include salvaging from the site, purchasing from local nurseries, contracting propagation, or some combination. Landforming work will affect the exact quantities, but a rough examination of existing numbers of plants and species per acre in the area would provide a good starting point. And I know of one local plant expert with a nursery who might be available to provide information on the success of propagating species not typically sold in nurseries and/or to could help propagate plants.



Melinda D Roth/R3/USDAFS  
07/01/2010 10:10 AM

To Debby Kriegel/R3/USDAFS@FSNOTES,  
mreichard@swca.com  
cc  
bcc

Subject Re: Fw: Landforming Reports - Please post Schor's report on  
Rosemont eis website

Thanks Debby. This note got buried in my email. I apologize.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
07/01/2010 09:31 AM

To mreichard@swca.com, Melinda D  
Roth/R3/USDAFS@FSNOTES  
cc

Subject Fw: Landforming Reports - Please post Schor's report on  
Rosemont eis website

Mindee and Melissa,

See my message below re where on WebEx to find Schor's report. Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
Coronado National Forest  
300 W. Congress  
Tucson, AZ 85701  
(520) 388-8427  
Fax (520) 388-8305  
[www.fs.fed.us/r3/coronado/](http://www.fs.fed.us/r3/coronado/)  
[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

— Forwarded by Debby Kriegel/R3/USDAFS on 07/01/2010 09:30 AM —



Melinda D Roth/R3/USDAFS  
05/27/2010 08:49 AM

To Debby Kriegel/R3/USDAFS@FSNOTES  
cc Beverley A Everson/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES, Teresa Ann  
Ciapusci/R3/USDAFS@FSNOTES  
Subject Re: Landforming Reports

You've got my OK.

Mindee Roth  
Coronado National Forest  
300 W. Congress, FB42  
Tucson, AZ 85701  
(520) 388-8319  
(520) 396-0715 (cell)  
(520) 388-8305 (FAX)

Debby Kriegel/R3/USDAFS

**Debby Kriegel/R3/USDAFS**

05/26/2010 12:41 PM

To Beverley A Everson/R3/USDAFS@FSNOTES, Melinda D  
Roth/R3/USDAFS@FSNOTES  
cc Teresa Ann Ciapusci/R3/USDAFS@FSNOTES, Debby  
Kriegel/R3/USDAFS@FSNOTES  
Subject Landforming Reports

Bev and Mindee,

I would like Teresa Ann to post both Horst Shor and Golder Associates reports on the Cooperating Agency website. I especially would like Pima County, ADEQ, and the town of Sahuarita to have access to the reports, but all Cooperators would be welcome to comment.

She needs the approval from one of you two to proceed with this. Please let her know if it's ok.

The reports are located on WebEx as follows:

- Golder report: Team Working/Resources/Visual Resources, "20100217 Golder Landforming.pdf"
- Shor report: Group Documents/EIS/Specialist Reports, "Rosemont Report-05-19-10-final.pdf"

Thanks.

~~~~~  
Debby Kriegel, RLA  
Landscape Architect  
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300 W. Congress  
Tucson, AZ 85701  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Dale Ortman PE"  
<daleortmanpe@live.com>  
06/30/2010 08:28 AM

To ""Debby Kriegel"" <dkriegel@fs.fed.us>, ""Salek Shafiqullah""  
<sshafiqullah@fs.fed.us>, ""Kathy Arnold""  
<karnold@rosemontcopper.com>,  
cc ""Tom Furgason"" <tfurgason@swca.com>, ""Jonathan Rigg""  
<jrigg@swca.com>, ""Beverley A Everson""  
<beverson@fs.fed.us>

bcc

Subject Barrel-Only Landform - Proposed Meeting/Conference Call

All,

The CNF has expressed that they would like to meet to review the updated landform. I propose we hold a meeting/conference call today, but both Debby and Salek have a commitment for this morning; therefore I would like to schedule the update for 1:30 PM (Arizona Time) this afternoon. The location will be the SWCA office, but those who are unable to physically attend may join via conference call.

Melissa/Jonathan, please issue invitations with the conference call number to all team members.

Kathy/Fermin, please email a PDF of the latest landform or let everyone know that the one attached to my emails is the working version.

I realize this is short notice, but this work is very likely leading to major change in the Barrel-Only Alternative and it is imperative that it be completed as soon as reasonably possible.

Please confirm your availability ASAP.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

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[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623



"Dale Ortman PE"  
<daleortmanpe@live.com>  
05/27/2010 09:32 AM

To ""Debby Kriegel"" <dkriegel@fs.fed.us>  
cc  
bcc  
Subject RE: Horst's final report

Debby,

Thanks for reviewing Horst's report; Rosemont is insistent on this prior to paying for the work. Under the lump sum contract Horst is paid in total when the project is complete, so to date he has received nothing for his effort.

I've asked SWCA to look at the disc that came with the report and see if there are map files other than the PDF of the report and figures. I'm told there are and SWCA will see if they open and can tell us what they are. I'll get back to you when we learn something.

Dale

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Thursday, May 27, 2010 8:55 AM  
**To:** Dale Ortman PE  
**Subject:** Horst's final report

Dale,

I understand that I need to provide a written approval on FS letterhead stating that Horst's final report is acceptable. I have the final report and will review it within a day or two. I can provide a letter on Tuesday.

We need the 3D model as well. Can you please verify that we (FS or SWCA) receive this data?

Thanks.

~~~~~  
Debby Kriegel, RLA  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Debby Kriegel/R3/USDAFS  
02/17/2010 03:22 PM

To "Marcie Bidwell" <mbidwell@swca.com>  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject RE: RSM 138kV Transmission Line Project - Simulation view  
3 photos 

Marcie,

Chelsa would like to set up a phone call with you and me (and possibly Kent) on Friday to discuss this. Sounds like Friday morning would work for you.

You don't sound very excited about B, and I'm not either. It bothers me that they couldn't find a photo point with less vegetation screening. Do we need to discuss this on Friday before we talk to Chelsa?

The answer to the question is #2. A 1000 ft. wide corridor gives a lot of wiggle room to put the line down in a canyon or up on a ridgetop (or most likely, some combination). If EPG won't be identifying a more precise route, I guess any of your simulations that include a power line will have to show the visually worst-case scenario (ridgetops).

Debby

"Marcie Bidwell" <mbidwell@swca.com>



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/17/2010 02:59 PM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Kent C Ellett"  
<kellett@fs.fed.us>  
cc  
Subject RE: RSM 138kV Transmission Line Project - Simulation view  
3 photos

Debby,

Sorry to be slow on responding to this. Option B, for the reasons that you describe, could work well.

For Option A, not all of the poles should be hidden by veg. But I think the proximity of the line in B works for me.

As to your questions below regarding the 1000ft corridor, are you saying because (1) there is only one alternative and that is to place the line in this corridor, or (2) because there isn't a refinement of the corridor into sub-options for the routing? (200 feet right or left of this placement, for instance).

I am available Friday morning if you would like to discuss further.

Marcie

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]



Beverley A  
Everson/R3/USDAFS  
11/23/2009 03:59 PM

To Debby Kriegel/R3/USDAFS@FSNOTES,  
karnold@rosemontcopper.com  
cc  
bcc

Subject Re: Fw: Rosemont - Action Items from May 7 meeting

Hi Kathy,

Please see Debby Kriegel's note below. Can you check on getting the photographs?

Thank you.

Bev

Beverley A. Everson  
Forest Geologist  
Coronado National Forest  
300 W. Congress Street, 6th Floor  
Tucson, AZ. 85701

Voice: 520-388-8428  
Fax: 520-388-8305

Debby Kriegel/R3/USDAFS

Debby Kriegel/R3/USDAFS  
11/23/2009 03:03 PM

To Beverley A Everson/R3/USDAFS@FSNOTES  
cc  
Subject Fw: Rosemont - Action Items from May 7 meeting

We never received the oblique aerial photo mentioned in item 3. Is it possible to obtain this?

----- Forwarded by Debby Kriegel/R3/USDAFS on 11/23/2009 03:01 PM -----

Debby Kriegel/R3/USDAFS  
05/07/2009 02:27 PM

To jlyndes@sagelandscap.com, kavid.krizek@tetrattech.com,  
Beverley A Everson/R3/USDAFS@FSNOTES,  
tfurgason@swca.com, mbidwell@swca.com, Salek  
Shafiqullah/R3/USDAFS@FSNOTES  
cc Debby Kriegel/R3/USDAFS@FSNOTES  
Subject Rosemont - Action Items from May 7 meeting

Action items from the flipchart at today's meeting:

1. Meeting in 3 weeks (tentative date = morning of June 4th)
  - Progress meeting
  - Sage & Tetra Tech to provide modified proposed action: stormwater, reclamation plan, and visual

work

- USFS will provide Feedback
- Sage will provide examples of other simulation projects

2. SWCA will provide Tetra Tech and Sage with (1) KOP GPS points ASAP, and (2) Evaluation Criteria and Affected Environment in 3 weeks

3. Tetra Tech will provide the USFS (Salek) and SWCA with new survey topo (2' contours) and oblique aerial photos by May 15

4. USFS will provide Tetra Tech and Sage with Concern Level 1 & 2 travelways by May 15

5. USFS will provide desired condition for project area by May 15

Thanks everyone!

Tom: Please forward this to Dale...I don't have his email address.

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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)



"Tom Furgason"  
<tfurgason@swca.com>  
11/13/2009 08:44 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Stephen Leslie"  
<sleslie@swca.com>  
cc "Beverley A Everson" <beverson@fs.fed.us>, "Charles  
Coyle" <ccoyle@swca.com>  
bcc

Subject RE: FW: Recreation and Wilderness Bounds of Analysis -  
Rosemont

Debby,

I've spoken with Steve and he has a prior commitment for next week and can not attend the meeting. One week notice is not enough time for several of our specialists to come to Tucson. The information that you provided is sufficient for us to prepare a detailed Scope of Work and cost and submit it to Rosemont.

The SOW will include travel time for Steve to spend a couple of days in the area and to meet with you. It will also include provisions for a follow-up trip to Tucson to meet with you.

Thanks you for taking the time to detail the work that you expect to be completed to support analysis of impacts to Recreational resources.

Tom

---

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, November 13, 2009 7:48 AM  
**To:** Stephen Leslie  
**Cc:** Beverley A Everson; Tom Furgason  
**Subject:** Re: FW: Recreation and Wilderness Bounds of Analysis - Rosemont

Steve,

Here's a list of work needed to complete recreation analysis for the EIS. I expect SWCA to take the lead on nearly all of these; I would provide advice and reviews. Since I typed this, I've received some additional direction on Inventoried Roadless Areas and met with the Arizona Trail Association, and I can share what I've learned with you.

In any case, please look this over and let's talk soon.

Thanks.

~~~~~  
Debby Kriegel, RLA  
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"Marcie Bidwell"  
<[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
07/08/2010 10:54 AM

To "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc  
bcc  
Subject RE: Checking in

Sounds great.

Will you be attending the RCC meeting today before you head out?

Trent and I notified Tom and Jonathan that we are still waiting on contour data for YR 20 for two alternatives (Scholefield and Barrel Only (barrel for obvious reasons) and for YR 10 for three alternatives (all except MPO). We have concerns regarding the fact that SWCA has until August 1 to turn things over to our editor to meet the August 15<sup>th</sup> deadline. We have received several layers and we are thankful for the ones that have arrived; however we are still waiting on stormwater clarification (we moved ahead without TT or RCC confirmation on stormwater for the MPO) and facilities data, as well as a few other smaller pieces.

I am going to write an email to you with the update for you to forward to Bev, Kathy, and Tt. Jonathan thought it would be best for it to come from you (USFS).

I will ask Trent but we will probably not have it completed before you leave in 1 hour.

Just an FYI that it will be in your in box when you return.  
Marcie

**From:** Debby Kriegel [<mailto:dkriegel@fs.fed.us>]  
**Sent:** Thursday, July 08, 2010 11:49 AM  
**To:** Marcie Bidwell  
**Subject:** Re: Checking in

Thanks for the update, Marcie. I'm leaving the office around noon today and won't be in tomorrow or Monday. I will attend the landforming meeting at SWCA's office tomorrow. I don't think it's a problem that you can't attend this, since it's mostly just Rosemont explaining what they changed. Let's touch base on Tuesday morning if that works for you. Debby

[mbidwell@swca.com](mailto:mbidwell@swca.com)

07/07/2010 10:18 AM

To "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc  
Subject Checking in

|                                                                                    |
|------------------------------------------------------------------------------------|
| Please respond to<br><a href="mailto:mbidwell@swca.com">mbidwell@swca.com</a><br>m |
|------------------------------------------------------------------------------------|

Hello Debby-

Just a quick note that the AE section is almost ready. I thought Mike had resolved some of the detail issues, but there are one or two remaining.

Additionally, Trent just received Phased Tailing contours for reclaimed surface. He also received the access road contours and fence alignment.

We are still waiting on the majority of the Scholefield and Upper Barrel information. I have asked Trent to prepare an update on data status for you and Tom.

I also have a response drafted regarding your simulation comments. I will send that to you later today.

We will also compile the images that we have for you and send them shortly.

I raised a red flag to Tom that this is July 7 and we still are waiting on data for the alternatives. With an August 15 deadline, this is a potential issue. I know he is aware and working on it.

Thanks!  
Marcie

Sent from my BlackBerry Smartphone provided by Alltel

Debby Kriegel/R3/USDAFS  
07/23/2010 11:50 AM

To tfurgason@swca.com  
cc Beverley A Everson/R3/USDAFS@FSNOTES,  
tjchute@msn.com, Debby Kriegel/R3/USDAFS@FSNOTES  
bcc  
Subject Rosemont - SWCA Scope of Work for Recreation

Tom,

In November 2009, I provided a scope of work to Steve Leslie (attached).



Recreation\_Work\_Tasks\_111009.docx

The February 12, 2010 Contract Modification and Scope of Work identifies just 3 relatively minor tasks from my list (which are identified in the mod as "New Tasks").

In the June 25, 2010 FS review of the scope of work, I commented that much of my November direction was not included. However, maybe I didn't clarify my concern fully. I do not know which items were in the original contract, which are done, which are still not funded, and which are coming (and when).

In speaking with you this morning, I now understand your comment in the sidebar. Steve still hasn't submitted the full affected environment with graphics, and told me that he would provide both this and the environmental consequences next week. I agree with you that the specialist report and DEIS chapter 3 may, in fact, be the same (though until we see his complete submittal, this can't really be confirmed).

**I would like to request that Steve go through my November list, and for each task note the status (complete, unfunded, to be provided by xx date, etc.).**

Thanks.

~~~~~  
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[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)

Debby Kriegel/R3/USDAFS  
07/23/2010 07:40 AM

To tjchute@msn.com  
cc Reta Laford/R3/USDAFS@FSNOTES, Melinda D  
Roth/R3/USDAFS@FSNOTES, Beverley A  
Everson/R3/USDAFS@FSNOTES, Debby  
bcc

Subject Rosemont Mitigation Table

Terry,

Here are my comments on the mitigation table and a comment on the memo.



FINAL\_Mitigation\_Table\_Kriegel.docx Mitigation\_Memo\_Kriegel.docx

-----  
Debby Kriegel, RLA  
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## **Rosemont EIS – Recreation Work Required**

Debby Kriegel, November 10 (revised Dec 18), 2009

1. Spend time in the field. Get familiar with the project site, proposed project, and existing recreation sites and activities in the northern Santa Rita Mountains. I recommend:

- Take Rosemont's mine tour (Wed & Fri? Check their website).
- Spend 1-2 days visiting the major recreation sites in the area. Drive Hwy 83 to Sonoita and through Empire Cienega RCA. Hike a short section of the Arizona Trail in the Rosemont area. Drive at least one OHV loop road in the Rosemont area (including Barrel Canyon), across Box Canyon Road, and into Madera Canyon.
- Consider visiting nearby Wilderness areas as appropriate/needed.

2. Review the following items for recreation direction, citations, etc.:

- Public comments (Recreation report on WebEx)
- FSM/FSH 2300
- Coronado National Forest Plan
- AZ Trails 2010
- BLM's Las Cienegas RCA Plan (including the approved Arizona Trail alignment through the area)
- National Visitor Use Monitoring (NVUM) and Statewide Comprehensive Outdoor Recreation Plan (SCORP)
- Preserving the Santa Rita Rosemont Ranch (Pima County document available on WebEx).
- Corridor Management Plan for the Patagonia-Sonoita Scenic Road
- The Sonoran Desert Conservation Plan (including the major documents on the website <http://www.pima.gov/CMO/SDCP/>), as well as the reports "Recreation Impacts in Eastern Pima County" and "Overview of Natural Resource Based Outdoor Recreation in Eastern Pima County".

3. Research the following (most will require field time and meeting with local people):

- Possible ways to offset the loss of recreation opportunities in the area for 20+ years (especially OHV touring and wildlife recreation). In addition to the obvious direct effects, indirect effects would include displacing OHV users from the Rosemont area into areas south of Box Canyon Rd, which is popular with equestrians, causing more user conflicts. Review Art Elek's proposal for adding roads and OHV facilities on FS lands east of Hwy 83, then meet with Art and spend time in the field determining what might be possible. Participate in the process for identifying lands off-forest that could be provided by Rosemont to use by birders, hunters, etc. Debby is hosting a meeting on Nov 19 with Arizona Game & Fish to begin discussions. Visit each possible site to determine recreation values.
- OHV improvements funded by Arizona State Parks. Contact Bob Baldwin at Arizona State Parks to get information on grants (amounts, dates, improvements) were provided for OHV facilities in the Rosemont area, and what obligations the Forest Service has to maintain these improvements and keep them available to the public.
- Hiking opportunities and use in the Rosemont area, including the Arizona Trail, the 16 Green Valley Hiking Club (GVHC) hikes in the Rosemont area, the Greaterville Trail, and options for post-mine trails in the area. Meet with GVHC. Debby is meeting with Arizona Trail Association on Nov 12 to begin discussion of the mine's impacts to the Arizona Trail. Depending on the outcome of this meeting, visit

alternative re-routes and provide post-mine recommendations. Meet with the Arizona Trails Association and spend time in the field as needed. Assess current use on the trail and describe how designation as a National Scenic Trail (NST) is likely to increase use, whether a mine would affect the scenic designation, and if there are national guidelines that could be helpful; Contact Tom Dwyer (Forest Service Wilderness, Trails, Wild & Scenic Rivers, Dispersed Rec Program Manager, SW Regional Office, 505-842-3233) and Johnathon Stevens (Forest Service Congressional Designated Areas and Trails Program Manager, Washington Office). Consider safety along the trail if the location follows the toe of 700 ft tall waste rock piles. Research whether NST status would be jeopardized by the mine and/or what mitigation/relocation would be necessary. Determine whether access points to the trail would be lost.

- Research Inventoried Roadless Areas and footprints and requirements for analysis (e.g., Effects on Roadless Character Report, if any roads proposed in IRA, Secretary of Agriculture approval needed, etc.)
- Restoration of popular road loops and road connections (for dispersed recreation and OHV touring) through or around the project area during mining and post-mine. Get familiar with the FS system roads and topography (existing and proposed). Get a copy of the proposed action for Travel Management for the Santa Rita Mountains (which should be available in mid-December). Consider also access across the ridge (currently at Gunsight Pass). Evaluate where existing visitors will likely go and whether OHV routes east of Hwy 83 would be helpful (see first bullet). Consider whether roads across the mine's waste rock and tailings would help restore recreation access and routes. Spend time in the field as needed. Provide recommendations for the proposed action and each alternative. Consider that the road into Sycamore Canyon has a locked gate at the bottom of the canyon and currently does not provide a loop or through-route.
- Recreation special use permittees in the Rosemont area that may be affected by the mine. Two known permittees include an equestrian outfitter guide, and a hang gliding operation in Box Canyon. Provide complete information on others (Archers and Bow hunters club, Muzzleloaders club, etc.). Contact Duane Bennett to discuss further.

4. See my comments on the "Rosemont Project EIS Draft Chapter 3 Outline, October 12, 2009" and additional comments from Tami Emmett.

5. Follow up on the status of revision of Tetra Tech report "State Route (SR) 83 Scenic Road Evaluation for Rosemont". On September 14, 2009, Debby provided comments to Rosemont. Rosemont or SWCA will need to contact Arizona Department of Transportation (ADOT) Scenic Roads Program staff to discuss the mine and determine whether the scenic road status would change.

6. Provide a specialist report for recreation that includes the following. Summarize as needed for the EIS. Include appropriate graphics, maps, photos, charts/figures, etc.:

- Affected environment. Include relevant information from above items.
- Environmental consequences analysis for the proposed action and each alternative. Include analysis of all mine impacts: pit, plant, waste rock and tailings piles, roads (including lost access, traffic, litter, etc.), power and water lines, displaced recreation, etc. Use information from site visits, research, and reviews above. Consider impacts during the active mine life and post-mine. Reference appropriate visual simulations. Utilize both qualitative (descriptive) and quantitative (acres of ROS, miles of road, miles of trail, number of rec sites lost, etc.) analysis.

- Cumulative effects analysis (a list of past, present, and reasonably foreseeable future actions should be available soon).
- Recommended mitigation.



**Kathy Arnold**  
<karnold@rosemontcopper.com>  
08/24/2009 09:00 AM

To "rich@soil-tech.com" <rich@soil-tech.com>  
cc Debby Kriegel <dkriegel@fs.fed.us>, Holly Lawson  
<hlawson@rosemontcopper.com>, Dennis Fischer  
<dfischer@rosemontcopper.com>, Jeff Cornoyer  
bcc

Subject Information

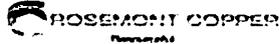
History:  This message has been forwarded.

Rich –

The Forest Service is interested in applying Permeon to some areas around our facility to test coloration and effectiveness. I am concerned because the information provided was not sufficient to meet the environmental standards I have set for product use at our company and therefore your product will not be allowed on our site without additional information. Please provide an updated MSDS and any laboratory data you might have on Permeon as it relates to stormwater runoff, fish mortality, disposal of the product, etc. so that I can make a decision regarding your product.

Regards,  
Kathy

**Katherine Arnold, PE** | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724  
[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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"Trent Reeder"  
<[treeder@swca.com](mailto:treeder@swca.com)>  
05/21/2009 12:21 PM

To "Debby Kriegel" <[dkriegel@fs.fed.us](mailto:dkriegel@fs.fed.us)>  
cc "Marcie Bidwell" <[mbidwell@swca.com](mailto:mbidwell@swca.com)>  
bcc

Subject RE: Proposed photo simulation questions

History: This message has been replied to.

Hi Debby,

Thanks for taking the time to explain the projects current standing. I totally understand in **not** getting too far ahead of ourselves when things are still being ironed out.

To address question 2, because a new topographic surface was generated from the final configuration CAD contour data to be used for our viewshed analysis, this surface will also work for our 3-D renderings. A very general order of operations are outlined below of our photo simulation process:

1. Create proposed topographic surface from project contour data.
2. Created individual 3-D 'scenes' that depict each KOPs vantage point of the project and export these scenes for quick visualizations. In this step, I move around the 3-D landscape to each KOP and setup scenes to export out as scenes for Step 3, but are also clear enough to send out as rough simulations.
3. Import 3-D scenes into a photo manipulation program to generate a photo "realistic" simulation of the proposed project as a final product.

From the above outline, Step 2 is ready to go and I will go ahead and generate a 3-D simulation of KOP 12 for everyone to view.

Marcie will have to answer Question 1 as she would have better information than I.

Thanks again, and please feel free to ask more questions!

Trent Reeder  
GIS Specialist  
SWCA Environmental Consultants  
[treeder@swca.com](mailto:treeder@swca.com)  
130 Rock Point Dr. Suite A  
Durango, Colorado 81303  
Work (970) 385-8566  
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**From:** Debby Kriegel [<mailto:dkriegel@fs.fed.us>]  
**Sent:** Thursday, May 21, 2009 12:26 PM  
**To:** Trent Reeder  
**Cc:** Marcie Bidwell; Debby Kriegel  
**Subject:** Re: Proposed photo simulation questions

Hi Trent (and Marcie),

I really appreciate all your effort on this project. It's great to see work moving along at a steady clip, and nice that you're looking ahead!!



"Marcie Bidwell"  
<mbidwell@swca.com>  
02/19/2009 11:31 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>  
cc  
bcc

Subject RE: Visual Proposal

Debbie,

To make sure that I respond explicitly to these comments, I am re-responding after our conversation today, for the sake of clarity in how we address the scope of work. See comments added below.

**From:** Debby Kriegel [mailto:dkriegel@fs.fed.us]  
**Sent:** Friday, December 12, 2008 9:04 AM  
**To:** Marcie Bidwell  
**Cc:** Tom Furgason; Debby Kriegel; Beverley A Everson  
**Subject:** Re: Visual Proposal

Marcie,

Good start. Some specific items in my 11/5 email to you aren't included, but that's probably ok...we can use both documents as guidance. And you've used some terms that I'm not familiar with such as "restoration indicators" and "setting indicators", but we can discuss that later.

I have a few immediate recommendations (and some questions):

1. Add a schedule for each task that ties to the Rosemont project schedule. Include as many dates for your work as possible: trips to Tucson, proposed meeting dates, deliverables, reviews, etc. I will create an integrated schedule as soon as I can catch Ken/Charles (hopefully today).
2. Does task 2 include researching other mining operations and reclamation? Roger Congdon (FS hydrogeologist on the team) mentioned that he knows of some great examples of waste rock reshaping and award-winning reclamation at BLM mines near Elko Nevada. I suggest that we plan a trip there (probably in January). Current scope from RC includes a minimal amount of research, and I will try to include the trip to Elko (or other project-offsite location). However, there is limited funds for trips to the site or elsewhere in the change order currently.
3. I don't see many of the written items that will need to be provided for the EIS listed in your tasks: issue statements, affected environment, environmental consequences, and cumulative effects. Please mention each of these in the appropriate task. As there are already accounted for in the original budget, I did not include them in my estimate. However, per our discussion today, I will indicate how these tasks are part of the overall process.
4. Do the hours on task 6 include more than your time and expenses? Won't you need a GIS/computer simulation expert to help with 3D modeling and create simulations for the final EIS? Are you certain that a topo model won't be helpful or necessary? Yes, they include GIS time for the 3D model and simulations. although the level of effort has yet to be agreed upon.
5. Where do I fit in? Are there some portions of any of the tasks that you need me to work on, or will I mostly be reviewing your work? I would need for you to indicate your involvement- perhaps there needs to be a USFS column in the schedule as well. Will work on format.

6. Go ahead and draft a similar proposal and schedule for the recreation analysis. Think about whether some of the recreation tasks can be coordinated with your visual resource work (like site visits). I'm attaching a 1/2 page document with some quick thoughts and some draft issue statements from our meeting this week. Recreation analysis we will need to discuss in more detail. Unless there are mining reclamation specific rec tasks, these may be adequately addressed in the normal EIS process. I will review the attachment again.

Give me a call if you'd like to discuss any of this.

Thanks!

Debby

"Marcie Bidwell" <mbidwell@swca.com>

12/10/2008 08:34 AM

To "Debby Kriegel" <dkriegel@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>  
cc  
Subject Visual Proposal

Debbie,

Here is what I am thinking as a start for you to review and throw your ideas in on.

There are probably errors in here (spelling, etc) but it starts to put the pieces together.

Lets discuss!

Marcie <<Visual Proposal 2008-12-09.pdf>>

Marcie Demmy Bidwell  
Environmental Planner  
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Durango, Colorado 81301  
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Fax: 970.385.1938  
[www.swca.com](http://www.swca.com)

Debby Kriegel/R3/USDAFS  
07/20/2010 07:40 AM

To "Melissa Reichard" <mreichard@swca.com>, mbidwell@swca.com  
cc "Beverley A Everson" <beverson@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Terry Chute" <tjchute@msn.com>, Debby  
bcc  
Subject Re: Friday's meeting notes with deadlines - Debby's comments 

Questions/Comments on the meeting notes:

1. Decisions made, bullet #1: Re-word to read "10 year simulations will not be included in DEIS"
2. Decisions made, bullet #2: Remove the word "Test"
2. Deadlines:
  - Re-word the first item (July 20 at 1 pm) to read "Vegetation Team meeting"
  - On the list under "Due July 23", re-word the last item to be 2 separate items: Revised Affected Environment and Outline for Environmental Consequences.
  - I will be making the presentation to Rosemont on Friday at 12:00 or 12:30. **Marcie: When will you provide the materials for this presentation? Also, did you say that you could attend via telephone? Please provide answers so Melissa can add to this schedule.**

Thanks.

"Melissa Reichard" <mreichard@swca.com>



"Melissa Reichard"  
<mreichard@swca.com>  
07/19/2010 10:19 AM

To "Terry Chute" <tjchute@msn.com>, "Beverley A Everson" <beverson@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Debby Kriegel" <dkriegel@fs.fed.us>, "Marcie Bidwell" <mbidwell@swca.com>  
cc  
Subject Friday's meeting notes with deadlines

All-

Here are the meeting notes from Friday that include all the new deadlines for visual resources.

Thanks!

*Melissa Reichard*

Project Administrator  
SWCA Environmental Consultants  
(520)325-9194 ofc. (520)250-6204 cell

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20100716\_PM Mtg.pdf

# Proposed Rosemont Copper Project

DRAFT- NOT FINAL UNTIL INITIALED BY BEV EVERSON OR MINDEE ROTH

Approved by:

\_\_\_ Bev Everson

\_\_\_ Mindee Roth

File in:

\_\_\_ Administrative Record

## Project Team Meeting

July 16, 2010

### Attendees:

#### Forest Service

Bev Everson

Terry Chute

Debby Kriegel

#### SWCA

Tom Furgason

Melissa Reichard

Marcie Bidwell

Trent Reeder

### Topics Discussed:

- Visit to TetraTech to acquire data layers necessary for visual simulations and other DEIS figures
- Most of work already done will need to be re-done due to new changes

### Decisions Made:

- 10 year contours not required for the DEIS
- Vegetation Test team: Salek, Bev, Terry, Debby and Bob

### Deadlines for Visual Resources:

July 20 at 1 pm- Marcie will do a simulation presentation to be sure they meet all needs

July 21- Close of data receipt- ANY data received after this date will not be included in DEIS

AND CNF decision on what type of vegetation to simulate required

July 23- The following due from Marcie to Debby:

3D sim GIS of all KOPs for all alternatives

Draft Photo Real for MPO and Phased Tails

Affected Environment and Env. Consequences outline

July 27- Sim feedback from Debby to Marcie due

July 30- Affected Environment feedback from Debby to Marcie due

Aug 9- The following due from Marcie to Debby:

Draft Photo Real for Barrel Only and Scholefield

Environmental Consequences

Aug 13- Env. Consequences and other sims feedback from Debby to Marcie due

Aug 23- Final package of Ch.3 section to SWCA QAQC team from Marcie due

Aug 30- Sims completed

### Action Items/Assignments:

- Debby- follow-up with Bob Lefevre on vegetation

## Task 5.2.Issue 2—Visual Resources

### Subtask A. Affected Environment Update for 6 Alternatives and Connected Actions

- Update affected environment to incorporate alternatives, for specialist report and EIS.
- Collect KOP in Tucson area with GPS and photography.
- Update basic existing conditions maps to show key observation points (KOPs), sensitive viewer areas, bounds of analysis, concern levels, and scenic objective classes.

### Subtask B. Prepare Alternatives Data: Convert CAD and Construct 3D GIS Surface

- Process CAD data and model data for GIS digital elevation modeling. Generate 3-D digital surfaces for the MPO and proposed alternatives at each construction phase selected for simulations.
- Create one set of 3-D working maps and diagrams for USFS and RCC to review potential scene from each KOP to be selected.
- Budget Assumptions: 12 data sets to process each alternative at 20-yr Phase and one additional time phase mid-construction.

### Subtask C. Prepare KOPs, Existing Conditions, Panoramas, and Visibility Maps

- Review all alternatives and KOPs established by the USFS and KOPs to propose to USFS for analysis, simulations, and level of detail for connected actions to define areas where impacts from the project is expected to be highly visible, distantly visible, and not visible (i.e. blocked or out of view)
- Prepare "existing conditions" panoramas for potential KOP simulations and review for use as simulations. For KOPs where project would be visible, select a phase to represent for each KOP in addition to Reclamation (i.e. construction at 5 years, etc.).
- Meet with USFS and RCC to review data, KOP selection and "photo realistic" process (1-2 meetings) includes meeting preparations, meetings, and meeting summaries. Review draft simulations with specialists from USFS, SWCA, and RCC to direct specific aspects of renderings (soils, reveg, etc.)
- Budget Assumptions: 8 KOPs 20-yr Phase and additional Phase for 6 KOPs

### Subtask D. Draft Specialist Report Analysis Methodology and Evaluation Criteria

- Draft analysis methods and evaluation criteria that will be used to define and evaluate project effects for the project resources included in the study for all alternatives and KOPs.

#### **Subtask E. Draft Visibility Diagrams and Simulations; Review with USFS/RCC**

- Create computer simulations of proposed alternatives (6 total action alternatives) for selected KOPs for highly visible, moderately visible, and distantly visible locations. Highly visible and moderately visible KOPs simulations will show 2 phases of the proposed alternatives for each KOP (e.g. TBD construction phase and 20-yr final reclamation). Each simulation will show waste rock and tailing pile forms, pit, roads, stormwater, vegetation, and infrastructure.
- For KOPs where the MPO and proposed alternatives would not be visible, prepare a section diagram or labeled panorama showing key landscape features and visual screen.
- Prepare photorealistic simulation images for KOPs.
- Review draft simulations with resources specialist from RCC, USFS, and SWCA to direct specific aspects of renderings; reclamation, soils, vegetation, etc.
- Complete a Draft review with USFS and RCC staff at meeting in Tucson.

#### **Subtask F. Prepare Environmental Consequences Analysis**

- Prepare an environmental consequences analysis for Specialist Report. Report will include analysis of direct, indirect, and cumulative effects, and compare alternatives. Utilize direction from FSM/FSH and USFS Project Level Scenery Analysis. Deliverables: Completed Visual Resources Specialist Report for all alternatives including draft simulations, visibility diagrams, and maps.

#### **Subtask G. Finalize Diagrams and Simulations; Review with USFS/RCC**

- Complete changes to simulations.
- Submit final formatted figures (e.g. panoramas, diagrams, simulations) to USFS and RCC for final approval.
- Budget Assumptions: Diagrams and Simulations will focus on land forms and will include 1 final review with USFS and RCC.

#### **Subtask H. Final Specialist Report.**

- Finalize Specialist Report and review with USFS.
- As needed, provide text for EIS.

#### **Assumptions:**

- Costs are based upon deliverables for each proposal according to the number of KOPs brought forward for simulations and figure diagrams. All alternatives will describe up to 24 KOPs for the analysis process. Revised USFS and USFS original budgets include up to 8 panoramas, non-visible KOPs diagrams for up to 6 KOPs, and simulations of highly visible and moderately visible KOPs for 8 KOPs for each of 6 proposed alternatives (up to 48 simulations) at 20-yr final reclamation and up to 6 KOPs for a construction phase per alternative (36 simulations). However, not

all KOPs will require simulations for all alternatives (i.e. Sycamore canyon will not be visible from many of the KOPs along SR 83). KOPs and level of detail for simulations will be formalized at the initial simulation meeting; however costs are assumed based upon the list of KOPs provided by the USFS Simulation Strategy.

- RCC to provide all data and elevations required for simulations, including a 3D model of any facilities, structures, or transmission infrastructure. USFS, RCC and SWCA will collectively contribute example imagery for depicting coloration, texture, formations, structures, and other details for portrayal in the simulations prior to simulations initiating. Surface data or changes to surface data that is provided/requested after 3D modeling is initiated will be incorporated on a time and materials basis. Direction regarding these details that is received after simulations have been initiated that varies dramatically may result in a change order. Simulations that require detailed development of the mine plant will be completed on a time and materials basis. Field work for 10 of the 14 KOPs has already been collected under the Visual Technical Report scope. SWCA assumes that Mt. Wrightson has been photographed by Rosemont's subcontractors and SWCA will be able to use this panorama for simulations. It is assumed that field documentation will be required for Box Canyon and Tucson KOPs at a minimum. Changes to the KOPs or to the construction phase selected for simulation after this meeting may require additional field work and may result in a change order. Additional KOPs, simulations, phases, or alternatives may be requested for an additional fee.
- Simulations will be classified as "highly visible" or "moderately visible". Highly visible simulations will show detailed variations in land form, vegetation, color, and texture for tailings and waste rock placement. Moderately visible simulations will show general variations in land form, vegetation, color and texture due to the level of detail being reduced by the distance of the viewer from the project area.
- Should KOPs simulations require extensive details of mining facilities, conveyors, equipment, transmission lines, etc, the work for these layers will be performed on a time and material basis, due to the unpredictable level of detail and effort required for these structures.
- Research for revegetation species and growth rates shall be provided by a separate contract funded by Rosemont. Based on findings, RCC and USFS are to agree upon the level of reclamation and vegetation success to be rendered prior to initiation of photoreal simulations. Changes in the direction given to SWCA to represent these aspects will require a change order, should they require additional time and effort to address.
- RCC will provide example photographs of existing reclamation, mining structures, vegetation mixes, soil types and colors, and other data to SWCA prior to the initiation of the simulations. Necessary imagery will be discussed at simulation meeting.
- This estimate assumes that SWCA will create 3D surfaces for MPO and proposed alternatives from RCC CAD drawings for up to 2 phases of construction. Should RCC provide GIS surfaces, these costs may be reduced accordingly.

- Changes in data, proposed action, and level of detail requested for simulations, phases of construction, and resolution of imagery after project initiation will require adjustments based upon time and materials. SWCA will submit surfaces to RCC and USFS for review prior to creation of simulations.
- Cost estimate includes two in-person meetings as two trips to Tucson for Marcie Bidwell to work with USFS and RCC on simulations, per direction of USFS staff. Additional trips may be required by USFS or RCC, and these will be arranged through an additional change order. Each task includes meeting hours for senior staff, visual specialist, editors as necessary and senior GIS under each task; additional meetings may be arranged on a time and materials basis.
- This scope of work includes one round of draft review and one round of final review for specialist report and simulations, unless review comments are extensive, in which case an additional draft review may be needed. Additional changes, reviews, or updates will require an additional change order. Ideally, review of final images will require minimal edits agreeable to both USFS and RCC for accurate portrayal of the MPO. Explorations of mitigation options (such as painting facilities alternative colors or reducing pit contrast through other than agreed-upon mitigation treatments ) would be covered under an additional scope. USFS and RCC should attempt to synchronize their comments prior to submittal to SWCA; should differences of opinion occur, SWCA will default to USFS guidance as the official SWCA client.



Kathy Arnold  
<karnold@rosemontcopper.com>  
02/17/2010 11:00 AM

To Debby Kriegel <dkriegel@fs.fed.us>  
cc  
bcc

Subject FW: Mitigation Table - Debby's questions for Rosemont

History:

✉ This message has been replied to and forwarded.

Debby –

Sorry so slow on the response, I wanted to be sure to answer fully. My answers in blue below.

Cheers!

Kathy

Katherine Ann Arnold, P.E. | Director of Environmental and Regulatory Affairs  
Cell: 520.784.1972 | Main: 520.297.7723 | Fax 520.297.7724

[karnold@rosemontcopper.com](mailto:karnold@rosemontcopper.com)



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**From:** Debby Kriegel <dkriegel@fs.fed.us>  
**Date:** Fri, 12 Feb 2010 09:31:18 -0600  
**To:** Katherine Arnold <karnold@rosemontcopper.com>  
**Cc:** Debby Kriegel <dkriegel@fs.fed.us>  
**Subject:** Mitigation Table - Debby's questions for Rosemont

Kathy,

Hopefully Bev or Mindee let you know that FS folks will be individually contacting you to resolve mitigation table questions. We have a deadline of next Friday (Feb 19) to get a "final" mitigation table completed, so your input in the next few days is really important.

Here are my questions for you...

#### Reclamation

- 11.2.8/181: The disposition is 3 & 4. What part of this needs clarification or more information? I think the change was the clarification...

#### Recreation

- General: Some recreation mitigation measures simply state what work is needed, while others mention an RRIMP. I recommend all recreation mitigation measures be edited to avoid the mention the RRIMP. Would this be ok with

- Rosemont? Confirmed OK with Rosemont.
- 12.1.1/194: The disposition is 2. Where in the MPO have alternative lands for recreation been addressed? I am aware that RCC has purchased private lands in the area and that conservation easements are planned, but am not aware specifically of public recreation uses planned for these lands. Can you provide information? Or should this be changed to a disposition 3? In the MPO – Section 3.5 discusses the changes
- 12.2.2/197: The first bullet doesn't state any actual mitigation work. Is it ok to delete this one? (the next two bullets and other mitigation measures cover the actual work items) I think that would be fine – although I think the Los Colinas section is the appropriate section so maybe the first and third bullets should be combined

### Visual Quality

- 15.2.1/234 and 15/3.2/237: You mentioned that the pit lake chemistry information you received recently looks good, and that desert varnish might be ok now. Can we change these dispositions to 3? Pit lake and 15.2.1 and 15.3.2 are not the same – these areas are areas where there would be runoff to stormwater and because of the non-degradation standard for stormwater the effects on quality need to be sorted out. I am concerned that painting white rock reddish is a contradiction of nature. I prefer that we not specify what stain would be used, but rather that a synthesised weathering effect can be addressed. It may be that a dirt wash, a hydraulic spray of pit water, or something else could be best. We will have plenty of time to address this at the end of the life of the facility and I would prefer not to have to try to do it early.
- 15.3.1/236: This is really a biology issue. I recommend moving this mitigation measure to Plants and Animals. Sound ok? I agree
- 15.3.3/238: I propose re-wording this to read "Treat upper portions of the pit wall that are visible from Highway 83, the Arizona Trail, and other Concern Level 1 travelways and residential areas within 5 miles of the pit, by applying desert varnish to darken rock to match weathered rock on the ridge at the conclusion of operations." The visually sensitive viewpoints where visitors would see lower portions of the pit are primarily up on Mt. Wrightson, so this should focus this mitigation on the upper, western wall of the pit. Sound ok? That change sounds okay I agree with the five mile radius.
- 15.4.1/240: The disposition states that this is duplicative of 235, but neither 235A or 235B states anything similar. Is it ok to change to a disposition 3? That is really a 2 – it is in our MPO reclamation plan as that.
- New mitigation measure: "Locate the perimeter fence as close to mine facilities as possible to maximize the protection of adjacent National Forest lands." Any problems with this? Yes – we want to put the perimeter fence out a bit from the ridgelines to keep people from walking into an area that would not be safe or stable – this is particularly a concern near the pit (hikers from the Sierra club will typically hike into an area above a pit to take pictures) so if there is a blast or other activity going on underneath them it is a public safety issue. I have also historically had people ducking under a fence and walking down haulage roads or hunters entering the property and using the area to hunt. We would like to put the perimeter fence outside of any of our inspection roads by the distance shown on the maps and put the fence to the west on the downside of the ridgeline to

keep people from walking into our area. It's also best if we can restrict access to the downside of the ridges on the perimeter that way no one can walk up to the fence look in and decide they want to use an area for recreation, sabotage or to steal solar panels, pumps, etc.

Please give me a call if you want to discuss any of these further.

Thank you!

~~~~~

Debby Kriegel, RLA  
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300 W. Congress  
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----- End of Forwarded Message

been using to discuss pros and cons of the concepts would continue with the proposed meeting scheduled for this week. I am wondering why this approach is being abandoned, as we have made positive strides in formulating a concept design which could please all the parties involved? From a quick review of just the drawing it is difficult to understand ALL the changes the design team has made as well as ALL the pros and cons of this concept.

Salek Shafiqullah, Hydrologist  
Coronado National Forest  
520-388-8377

"Dale Ortman PE"  
<daleortmanpe@live.com>

06/29/2010 10:12

AM

To: "Debby Kriegel" <dkriegel@fs.fed.us>, "Salek Shafiqullah" <sshafiqullah@fs.fed.us>  
cc: "Beverley A Everson" <beverson@fs.fed.us>, "Tom Furgason" <tfurgason@swca.com>, "Melissa Reichard" <mreichard@swca.com>, "Jonathan Rigg" <jrigg@swca.com>, "Kathy Arnold" <karnold@rosemontcopper.com>, <fsamorano@rosemontcopper.com>, "Krizek, David" <David.Krizek@tetrattech.com>, "Marcie Bidwell" <mbidwell@swca.com>  
SubjectFW: Barrel-Only Landform

Debby & Salek,

I have not received a response to the recommendations in the email below. Please provide your input regarding the recommendations so that we may reach an expeditious conclusion to the team's efforts and proceed to a potential alternative for Reta's consideration.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

(520) 896-2404 - Arizona Office  
(520) 449-7307 - Mobile  
(435) 682-2777 - Utah Office

[daleortmanpe@live.com](mailto:daleortmanpe@live.com)

PO Box 1233  
Oracle, AZ 85623

**From:** Dale Ortman PE [mailto:daleortmanpe@live.com]  
**Sent:** Sunday, June 27, 2010 6:29 PM  
**To:** 'Debby Kriegel'; 'Salek Shafiqullah'; 'mbidwell@swca.com'; 'Kathy Arnold';

'fsamorano@rosemontcopper.com'; 'Krizek, David'

**Cc:** 'Beverley A Everson'; 'tfurgason@swca.com'; 'Jonathan Rigg'; 'Melissa Reichard'

**Subject:** Barrel-Only Landform

**Importance:** High

All,

Attached is the latest landform topography developed by Rosemont for the Barrel-Only landform alternative. This landform has been developed through the joint efforts of the CNF, SWCA, Rosemont, and TetraTech and incorporates the following elements:

- Extension of the Upper Barrel drainage within the landform
- Multiple ridge landforms with differing elevations
- Potential for variable slopes on eastern flanks of the landform
- Potential for reduction in number of drainage control benches on eastern flank of landform
- Improved stormwater discharge control utilizing the extension of the Upper Barrel drainage
- Maintain overall 3:1 slopes with drainage benches on west side of landform to provide required storage capacity and maintain tailings placement operations
- Maintain waste rock perimeter buttress surrounding tailings
- Maintain encapsulation of the heap leach facility

The team has done an excellent job in the collaborative effort to develop this landform concept. I believe we have reached a point in the process where the landform concept should be turned over to Rosemont for final engineering development as the Barrel-Only Alternative for consideration in the DEIS. I recommend that, in addition to the general design objectives listed above, Rosemont develop the following during the final engineering:

- Confirm constructability of the landform
- Summarize the concurrent & final reclamation plan
- General layout of rock sub-drains & flow-through drains
- General stormwater control plan, including commitment to the design criteria currently in the Site Water Management Plan Update

In addition, I propose that we not meet on June 30<sup>th</sup> as currently scheduled but the team review the attached landform and provide any additional design objectives for Rosemont to include in the final engineering. Please get back to me ASAP with comments and any design objectives you believe should be included in the final design.

If you have any questions please email me or try the Utah phone listed below.

Regards,

Dale

---

Dale Ortman PE PLLC  
Consulting Engineer

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