From: Leidy, Robert []
To: Marjorie.E.Blaine@usace.army.mil [B(6)
CC: Goldmann, Elizabeth [Goldmann.Elizabeth@epa.gov]
Subject: FW: EIS Question (UNCLASSIFIED)
Sent:

Hi Margorie,

B(5)

Please don't hesitate to call me if you would like to discuss the document and its conclusions.

Best,

Rob

Robert A. Leidy, Ph.D.
U.S. Environmental Protection Agency
Wetlands Office (WTR-8)
75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3463

-----Original Message-----
From: Goldmann, Elizabeth
Sent: Thursday, December 19, 2013 3:52 PM
To: Leidy, Robert
Subject: FW: EIS Question (UNCLASSIFIED)

-----Original Message-----
From: Blaine, Marjorie E SPL [mailto:M B(6)
Sent: Thursday, December 19, 2013 3:09 PM
To: Goldmann, Elizabeth
Subject: FW: EIS Question (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Liz:

I [redacted]

Thanks. Have a great holiday.

Marjorie
Assist us in better serving you!
You are invited to complete our customer survey, located at the following link:
http://www.spl.usace.army.mil/Missions/Regulatory.aspx
Note: If the link is not active, copy and paste it into your internet browser.

-----Original Message-----
From: Chris Garrett [mailto:cgarrett@swca.com]
Sent: Wednesday, December 18, 2013 6:54 PM
To: Blaine, Marjorie E SPL
Cc: Jim Upchurch
Subject: [EXTERNAL] Re: EIS Question (UNCLASSIFIED)

To be specific, Table 65 represents the approximate time when groundwater drawdown greater than 0.1 feet occurs at a given location.

This general issue was indeed discussed with EPA in November but it was not in relation to Table 65. It was in relation to text in the Seeps, Springs & Riparian section. In response to that discussion we changed language and added text to the SS&R section to make it clear that while we were analyzing riparian impacts at certain snapshots in time (50, 150, 1000 years) the drawdown would gradually build over time and could occur earlier.

But to my recollection EPA never brought up Table 65 during our collaboration. In fact, the discussions were focused only on the SS&R section.

With respect to Table 65, I would disagree that impacts would occur earlier than the years shown. A drawdown of 0.1 feet is the smallest increment we could look at--points in time before those shown in Table 65 are essentially zero drawdown.

Sent from my iPhone

On Dec 18, 2013, at 6:25 PM, "Blaine, Marjorie E SPL" <[redacted]> wrote:

Classification: UNCLASSIFIED
Caveats: NONE

Chris

[redacted]

I just had a long discussion with EPA regarding the information presented in Table 65. This table provides the results of the sensitivity analyses for the timeframe in which one could expect impacts to occur from groundwater drawdown. The manner in which the table is entitled leads me to believe the timeframes shown are when one would expect to see INITIAL impacts.

However, EPA states they discussed this with you all because they believe the impacts will start much earlier than indicated on the table and you all agreed that the data in the table is misleading and concur impacts will begin from the time the drawdown first occurs. I would think it would actually take some time to see effects but I need to verify exactly what that Table means and if, as EPA states, it is misleading just due to an oversight in editing it.

Thank you. Happy Holidays.

Marjorie Blaine
[redacted]
B(6)
[redacted]

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Classification: UNCLASSIFIED
Caveats: NONE

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Caveats: NONE

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
LCNCA_Merged.zip
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

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05-20-2013 19:02:22

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06-07-2013 07:02:28

Bushnell
Empire Cien 25.60Int 21F
04-20-2013 06:00:58

From: Simms, Jeffrey [jsimms@blm.gov]
To: Leidy, Robert [Leidy.Robert@epa.gov]
CC:
Subject: Fwd: project update w/ LCNCA cienega GIS shape files and calculated area with centroid lat/long
Sent: 29 Jul 2013 16:45:14 -0

Rob,
[redacted] If you want to contact
Andrew at the Desert Botanical Gardens in Phoenix, feel free.

Cheers

---------- Forwarded message ----------
From: Andrew Salywon <asalywon@dbg.org <mailto:asalywon@dbg.org> >
Date: Fri, Jul 26, 2013 at 1:43 PM
Subject: project update w/ LCNCA cienega GIS shape files and calculated
area with centroid lat/long
To: Jeffrey R Simms <jsimms@blm.gov <mailto:jsimms@blm.gov> >, Karen M
Simms <ksimms@blm.gov <mailto:ksimms@blm.gov> >
Cc: Gita Bodner <gbodner@tnc.org <mailto:gbodner@tnc.org> >, Ron Tiller
<rl_tiller@hotmail.com <mailto:rl_tiller@hotmail.com> >, Kevin Hultine
<khultine@dbg.org <mailto:khultine@dbg.org> >

Hi Karen & Jeff,

Here is a brief update of our research along with some data files.

Cienega Shapefiles:
Please find attached GIS shape files and CSV file with calculated areas
and centroid lat/long for cienegas. We have not been to Cold Spring yet,
so data is not included. Other than that we should have most of the big
stuff covered with just little bits here and there to add. As of right
now the total cienega area is 26.7 acres (26.7cienega acres/ 45,000
acres for LCNCA = 0.06% of the landscape).
Please let us know of anything we are missing. We will also consult
with Phil Rosen & Dennis Caldwell to see if they can point out any spots
we may have missed.

Well Elevations:
We have surveyed in 20 wells using a TOPCON GRS1 with a PG-A1 antenna.
Many of our data points have an an accuracy of < 1 ft. I have attached a
draft of the data for some of these to show our progress (we still have
to double check these to make sure the well casings were subtracted from
the data so these elevations may change). Not all of the 20 are included
because they need post-processing, which we will do soon. We will be
returning to finish the remaining 20 well in either late Aug or early
Sept.

Isotope & Water Quality Samples:

We have collected 25 water samples from wells, creek, springs and all the major cienegas and will continue to collect samples on our next trip. We are in the process of deciding which ones we will have the funds to actually run, and which ones we hope to run at a later date - if there is a continuation of funding.

Field Camera:
Our field camera at Empire Cienega, installed on April 13, 2013, was still there on July 21. We are getting lots of pictures (ca. 2,000 so far) in order to quantify wildlife use and to visualize water levels. See attached photo examples. It is our hope to obtain images from 1 whole year.
After talking to Shawn Lawrey at AZGF, it is a good bet the the Cieneguita camera was stolen along with the data, so we have nothing to report other than the theft.

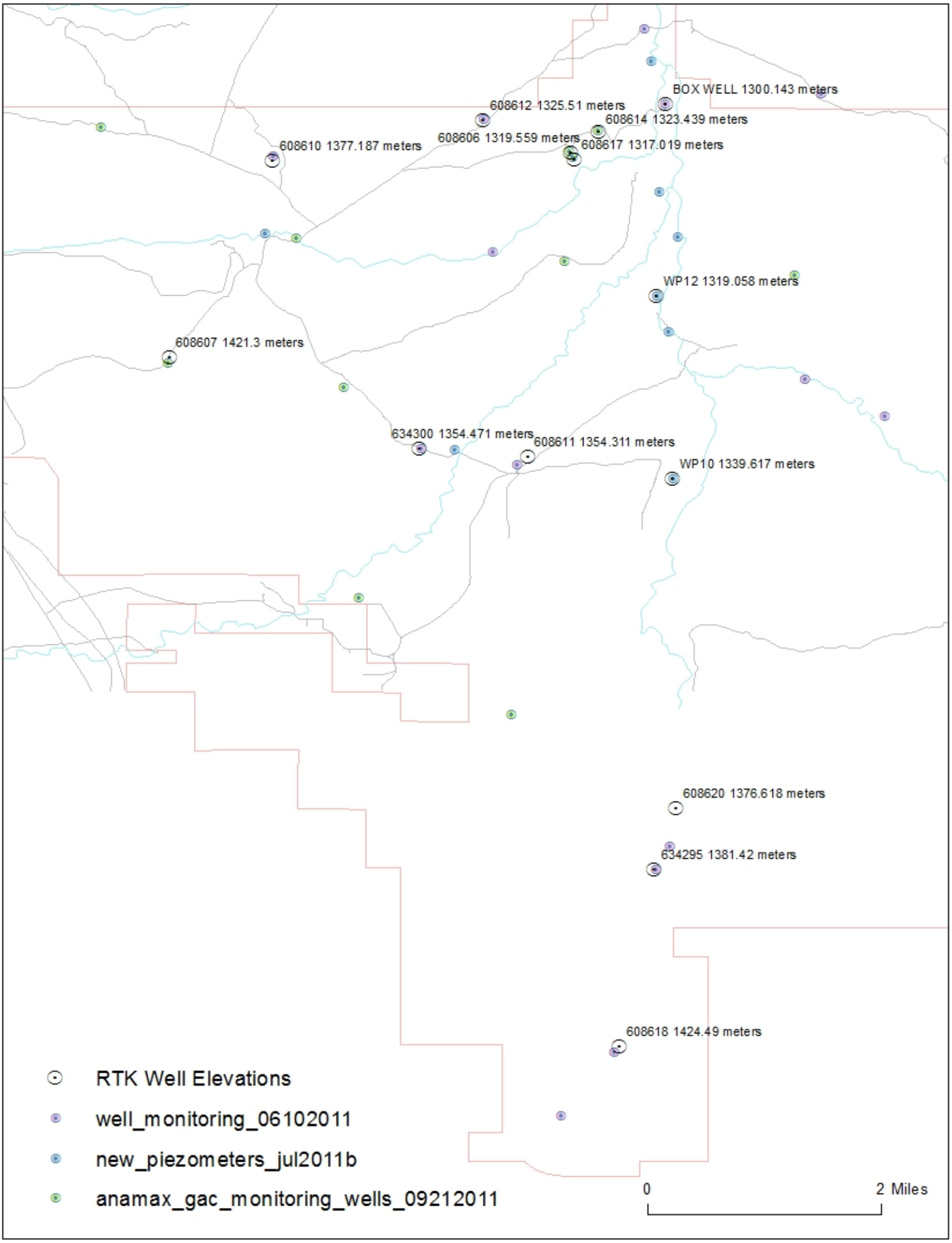
That is all for now.

Best regards,
Andrew

Andrew Salywon, Ph.D.

Assistant Curator & Research Botanist
Desert Botanical Garden Herbarium (DES)
1201 N. Galvin Parkway
Phoenix, AZ 85008-3437

480-481-8107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608607 1421.3 meters
634300 1354.471 meters
608611 1354.311 meters
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Water expert suggests all parties learn the facts about Rosemont Mine

AZ DAILY STAR NOVEMBER 20, 2013 12:00 AM • W. R. OSTERKAMP SPECIAL TO THE ARIZONA DAILY STAR

Two recent guest opinions in the Star inaccurately cited my 2011 commentary relating potential groundwater impacts with the proposed Rosemont Mine.

Rick Grinnell, in “Learn facts before taking position on Rosemont,” Nov. 6, responded to an earlier opinion piece by Paul Green, executive director of Tucson Audubon. In “Carefully consider lasting effects of copper mine on waterways,” Sept. 25, Green opined that lasting effects of Rosemont “must be considered carefully.”

Green reported that my model predicts lowered water levels of 600 to 900 feet. I specifically wrote that water-level reductions of 660 to 980 feet (Elgin, Sonoita areas) were a “worst-case” scenario.

Grinnell, the vice president of the Southern Arizona Business Alliance and a former Rosemont lobbyist, gave excellent advice to readers when he urged them to “learn the facts,” but his concept of “facts” is flawed. Data, assumptions, observations and interpretations must be considered (in earth science, nothing is “factual”). Accepting his term, however, Grinnell violated his advice by drawing conclusions from invalid assumptions and observations.

I am a research hydrologist, emeritus, having had a career with the U.S. Geological Survey’s Water Resources Division, which qualifies me to have written “Statement of Concern — Groundwater Resources of the Sonoita Plain.” It was published by the Sonoran Institute and is available on the Internet at www.sonoraninstitute.org. The statement was unsolicited and unfunded, does not evaluate benefits or liabilities of Rosemont, but contends that a 2,900-foot-deep mine might cause problems. It asserts

that water discharge into the pit is inevitable, but that data are too meager to predict effects. The obvious concern was advanced — that even moderate drainage of water is risky.

Recognizing that groundwater flow into the pit could threaten water needs of the Sonoita Plain, I expressed fears to colleagues. Dino DeConcini, an attorney, and Joaquin Ruiz, dean of the University of Arizona's College of Science, requested independent analysis from Larry Winter, professor and head of the UA Department of Hydrology and Water Resources. Winter's conclusions focused on likely hydrologic changes instead of a worst-case scenario. His report, an appendix to the statement of concern, included:

"I made a quick estimate of pressure head drawdown at distances up to 50 km from (the pit). Assuming no (computational) mistakes were made, these rough calculations indicate that a drawdown of about 5-10 m might be expected at a distance of 10 km from the open pit. Given the material heterogeneities found in many karst systems, it is possible that much greater drawdowns could be observed at some locations.

"Since the current exercise is only meant to indicate risk, rough estimates of parameters are used here based on experience."

Larry Winter used "a quick estimate" and "rough estimates of parameters," terms not used by me. Grinnell, however, attributed them to me, a misrepresentation of our statements. Grinnell wrote that I used a "groundwater model"; in all cases my approach was a conceptual model differing from the consultants' flow models or Winter's hydraulic model.

Grinnell asserted that findings of Montgomery and Associates, Tetra Tech and Tom Myers "clearly contradict Osterkamp's conjectures." Inspection of the modeling reports refutes his assertion. Cherry-picking reports, of course, yields the desired conclusion, but it is difficult to misrepresent passages from each.

Montgomery and Associates: The predicted elevation of the pit bottom "is below the current groundwater level in the proposed pit area and will necessitate the removal of groundwater during mining operations."

Tetra Tech: Dewatering by the pit "will result in groundwater levels being lowered to approximately 3,020 feet, … which is about 2,200 feet below the pre-mining water level in the immediate project area."

Myers: The pit "would lower the regional aquifer water table by up to 2,000 feet within the pit area and cause a drawdown cone and groundwater to discharge into the pit. … The drawdown shape often takes the shape of an inverted cone. The drawdown cone would change the water table for a significant distance from the pit and affect groundwater flows throughout nearby watersheds."

Winter: “... a regional groundwater study seems in order.”

I submit that these quotes endorse my hydrologic interpretations.

Lastly, the statement of concern recommended comprehensive, impartial, peer-reviewed investigations by experts before mining activity. I encourage these recommendations for an objective, “fact-based” understanding of groundwater of the Sonoita Plain.

From: Simms, Jeffrey [jsimms@blm.gov]
To: Leidy, Robert [Leidy.Robert@epa.gov]
CC: Daniel Moore [d3moore@blm.gov]
Subject: Guest Opinion on Rosemont Mine Hydrologic Impacts - Dr. Osterkamp (Retired USGS)
Sent: 22 Nov 2013 10:18:20 -0

Rob,

[redacted]

[redacted]

Cheers

[redacted]

Comments on Ground Water Impacts Proposed Rosemont Mine

From EPA (1996) p3-8 System Heterogeneity

"One of the primary objectives of the site characterization program is to identify heterogeneity within the system and to delineate zones of varying hydraulic properties. System heterogeneity is one of the leading causes of a poor understanding of the physical system controlling flow and transport. If an accurate simulation of heterogeneous rocks is required to meet the modeling objectives, a modeling approach which allows for zones with different porous rock properties is required; however, relatively few codes can simulate discrete features, such as faults, fractures, solution features, or macropores."

From Montgomery and Ass. 2009 – pages 17 and 18
"Geologic structure and faults identified in and around the Rosemont project area from previous geologic investigations are delineated on **Figure 3**. Results of hydraulic testing and measured groundwater levels were evaluated to determine whether faulting in the area acts as substantial barriers or conduits for groundwater movement. Specific identification and characterization of individual faults that substantially impact groundwater movement cannot be determined based on available data. However, available data does support a direct relationship between hydraulic conductivity and degree of fracturing in the bedrock complex in vicinity of the proposed Rosemont mine. Variation in fracture intensity results in zones of variable hydraulic conductivities in the Rosemont project area. Occurrence of these heterogeneities, in terms of aquifer regions or blocks delineated essentially by geologic structure and lithology, is documented in M&A (2009).

A fault zone extending through the Davidson Canyon area is of particular significance to the movement of groundwater in the area. The fault zone is inferred to occur northeast from the proposed pit, trending north along the Canyon **(Figure 3)**. The Davidson Canyon fault zone separates the Santa Rita and Empire Mountains (Ferguson and others, 2001). It consists of at least two major faults in which the west side is down relative to the east side. The eastern fault can be traced south across the northern and western pediment of the Empire Mountains, approximately 1 mile east of Davidson Canyon. The western faults trace is concealed by alluvium (Ferguson and others, 2001). Potential hydraulic influence of this fault zone is evaluated as part of this investigation."

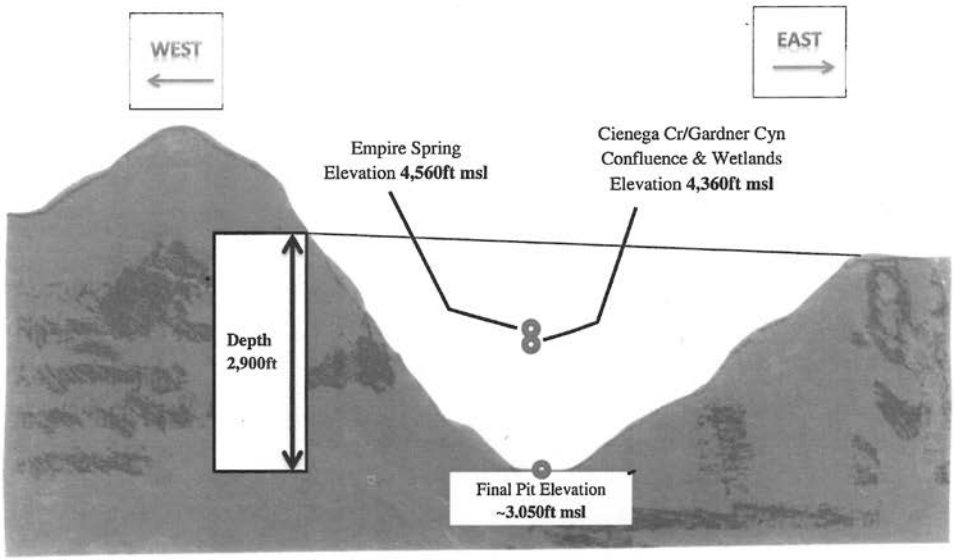
Doughty and Karasaki (2010) noted that a wide range in travel times modeled for fractured bedrock by the different research groups for the same site can be largely attributed to orders of magnitude differences in the effective porosity used for the fracture network. This underscores the importance of accurate estimates as a key component of site characterization.

In general, it is widely recognized that ground water modeling does not provide more than a modest level of quantitative certainty in complex geologic settings (EPA 1989, EPA 2001, EPA 2003, GW modeling see comments submitted June 2011) and previous comments to the FS). This puts the analysis of impacts to listed aquatic species at risk of error with dire consequences

if the estimate is low by even a small margin. The geologic setting of the proposed mine site is likely to have these “conduits” of GW flow that violate modeling assumptions using simplified inputs.

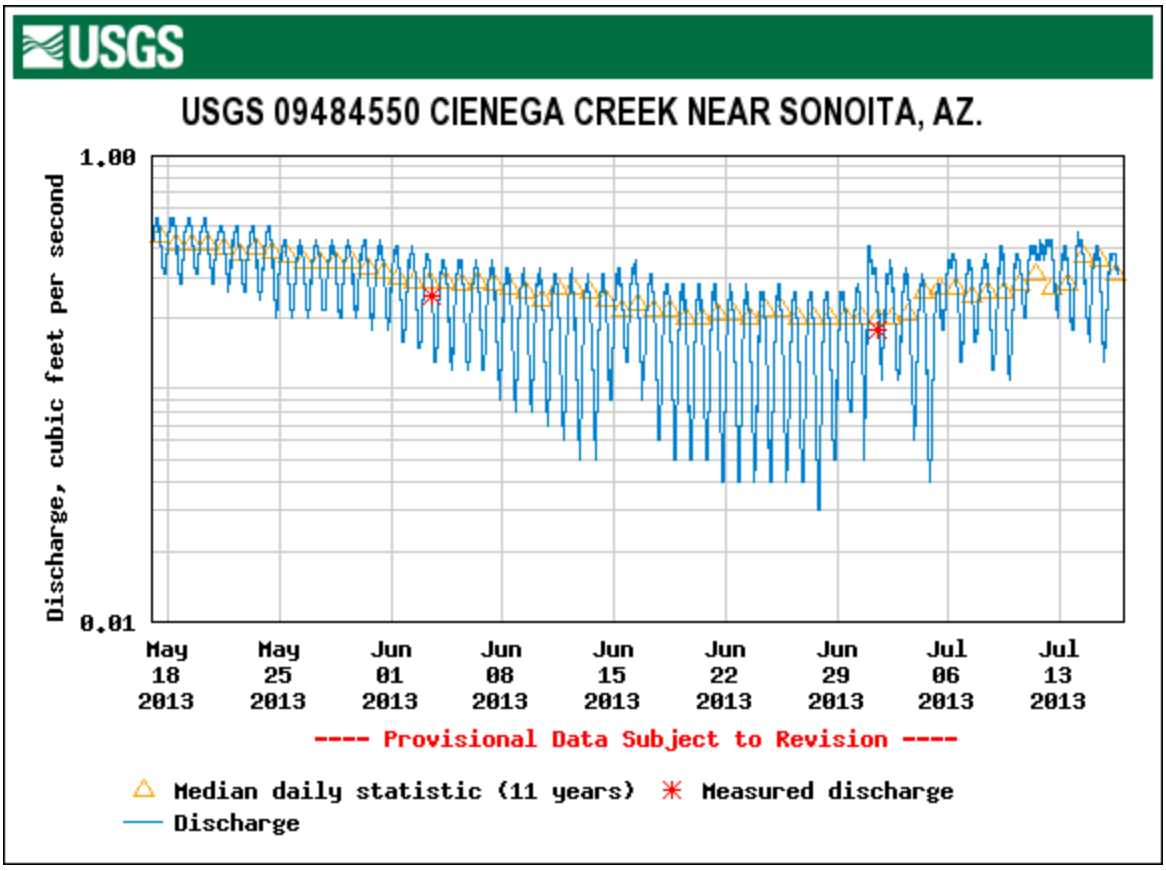
What is certain is that the pit would cause a profound lowering of the regional aquifer around the pit with a reversal of the natural gradient and creation of a steep gradient moving water towards the pit. The cone of depression created by the pit would radiate out from the pit and capture water. This effect would extend to the south east that feeds surface flow to Cienega Creek, Mattie Canyon, Empire Gulch, and over 30 perennial and seasonal wetlands. The rate of GW declines around the pit is debatable and is not as important as the final outcome. The impacts to GW are likely to cause the slow but eventual collapse of the aquatic ecosystem on the LCNCA and Pima County lands. These kinds of impacts are irreversible, cannot be mitigated and will last for centuries.

Conceptual model illustrating the relationship between proposed final mine pit depth and elevations of important surface water features on the LCNCA.



This discussion concerning the GW modeling in the BA and EIS mention specifically that models are only an approximation of reality and the modeler has to constantly assess whether the model results are accurate and realistic. Models can be calibrated based on sensitivity analysis of various hydraulic parameters. However, verification is not possible for this mine prior to pit excavation and actual ground water parameter measurements have been collected. By this time some impacts to ground water and surface water will have already occurred. The applicability of

the 3 modeling exercises conducted are not likely to produce reliable results (EPA 1996, EPA 1998, EPA 2001, EPA 2003 and others) as the area is located in a complex, heterogeneous geologic setting. The ground water modeling accuracy cannot be verified until the mine pit is excavated. According to the literature cited above; because of faults, fractures and possibly karst formations that exist in the mine pit area, modeling estimates of GW losses from the Cienega Creek basin will be under estimated. Faults and fractures are described in various supporting documents to the DEIS. Characterization of these geological attributes is rudimentary and, therefore, not factored into the quantitative modeling or qualitative description of hydraulic connectivity between the pit and outlying areas. The modeling is taken at face value implies a high level of certainty where none exists due to the site conditions and scientific investigations mentioned above. The hydrologic analysis is not complete enough without including the conveyance estimates for water in adjacent areas to the pit, therefore is not reliable enough for an informed and well-reasoned management decision.



Lit Cited

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Link - http://www.epa.gov/radiation/docs/assessment/402-r-94-012.pdf

From: Simms, Jeffrey [jsimms@blm.gov]
To: Leidy, Robert [Leidy.Robert@epa.gov]
CC: Daniel Moore [d3moore@blm.gov]
Subject: Information on Hydrolic Modeling I Put Together for the Rosemont EIS
Sent: 16 Jul 2013 16:36:11 -0

Rob,

[redacted]

[redacted]

Cheers

From: Simms, Jeffrey [jsimms@blm.gov]
To: Leidy, Robert [Leidy.Robert@epa.gov]
CC: Dennis Sylvia [dsylvia@blm.gov]; Karen Simms [ksimms@blm.gov]; Daniel Moore [d3moore@blm.gov]
Subject: Letter from BLM to USFS Concerning Comments on the Rosemont Mine EIS
Sent: 13 Aug 2013 16:49:01 -0

Rob,

[redacted]

The cover letter for our comments is attached.

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"The nation behaves well if it treats its natural resources as assets which it must turn over to the next generation increased, and not impaired, in value." ~ President Theodore Roosevelt ~

According to historian Douglas Brinkley, Roosevelt believed that "saving natural wonders, wildlife species, timberlands and diverse habitats was a patriotic endeavor."

Jeff Simms

Fishery Biologist

Tucson Field Office

3201 E Universal Way

Tucson, AZ 85756

Phone 520-258-7209

Fax 520-258-7217

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Tucson Field Office
12661 East Broadway Boulevard
Tucson, Arizona 85748-7208
www.blm.gov/az/

April 29, 2011

Mr. Jim Upchurch
Forest Supervisor
Coronado National Forest
300 W. Congress Street
Tucson, AZ 85701

Dear Mr. Upchurch,

On February 15, 2011, your office hosted a meeting for the Bureau of Land Management, Tucson Field Office (BLM) to address the technical aspects of the ground water modeling process for the ongoing Rosemont Mine Environmental Impact Statement (EIS). BLM specialists for hydrology, mining and threatened and endangered species attended that meeting.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] If you have any additional questions regarding these comments, please contact me at 520-258-7201.

Sincerely,

Brian B. Bellew

Enclosures

From: Leidy, Robert []
To: Marjorie.E.Blaine@usace.army.mil [redacted]
CC: Goldmann, Elizabeth [Goldmann.Elizabeth@epa.gov]
Subject: RE: EIS Question (UNCLASSIFIED).
Sent:

Hi Margorie,

[redacted] B(5) [redacted]

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Sent: Thursday, December 19, 2013 3:52 PM
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Sent: Thursday, December 19, 2013 3:09 PM
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Classification: UNCLASSIFIED
Caveats: NONE

Liz:

[redacted] B(5) [redacted]

Thanks. Have a great holiday.

Marjorie
Assist us in better serving you!
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-----Original Message-----
From: Chris Garrett [mailto:cgarrett@swca.com]

[redacted]

Sent: Wednesday, December 18, 2013 6:54 PM
To: Blaine, Marjorie E SPL
Cc: Jim Upchurch
Subject: [EXTERNAL] Re: EIS Question (UNCLASSIFIED)

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But to my recollection EPA never brought up Table 65 during our collaboration. In fact, the discussions were focused only on the SS&R section.

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Sent from my iPhone

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Thank you. Happy Holidays.

[redacted]

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Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

From: []
To: Marjorie.E.Blaine@usace.army.mil [B(6)
CC: Goldmann, Elizabeth [Goldmann.Elizabeth@epa.gov]
Subject: RE: EIS Question (UNCLASSIFIED)
Sent:

Hi Margorie,

Thanks for forwarding Chris's response to Liz. B(5)

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Classification: UNCLASSIFIED
Caveats: NONE

Liz:

CORPS EQUITY Please see his response below.

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Marjorie
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This general issue was indeed discussed with EPA in November but it was not in relation to Table 65. It was in relation to text in the Seeps, Springs & Riparian section. In response to that discussion we changed language and added text to the SS&R section to make it clear that while we were analyzing riparian impacts at certain snapshots in time (50, 150, 1000 years) the drawdown would gradually build over time and could occur earlier.

But to my recollection EPA never brought up Table 65 during our collaboration. In fact, the discussions were focused only on the SS&R section.

With respect to Table 65, I would disagree that impacts would occur earlier than the years shown. A drawdown of 0.1 feet is the smallest increment we could look at--points in time before those shown in Table 65 are essentially zero drawdown.

Sent from my iPhone

On Dec 18, 2013, at 6:25 PM, "Blaine, Marjorie E SPL" <Marjorie.E.Blaine@usace.army.mil> wrote:

Classification: UNCLASSIFIED
Caveats: NONE

Chris

I just had a long discussion with EPA regarding the information presented in Table 65. This table provides the results of the sensitivity analyses for the timeframe in which one could expect impacts to occur from groundwater drawdown. The manner in which the table is entitled leads me to believe the timeframes shown are when one would expect to see INITIAL impacts.

However, EPA states they discussed this with you all because they believe the impacts will start much earlier than indicated on the table and you all agreed that the data in the table is misleading and concur impacts will begin from the time the drawdown first occurs. I would think it would actually take some time to see effects but I need to verify exactly what that Table means and if, as EPA states, it is misleading just due to an oversight in editing it.

Thank you. Happy Holidays.

Marjorie Blaine
Senior Project Manager/Biologist
U.S. Army Corps of Engineers
Tucson Project Office, Regulatory Division

5205 E. Comanche Street
Tucson, AZ 85707
(520)584-1684 (phone)
(520)584-1690 (fax)

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http://www.spl.usace.army.mil/Missions/Regulatory.aspx

Note: If the link is not active, copy and paste it into your internet browser.

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

From: Leidy, Robert []
To: Simms, Jeffrey [jsimms@blm.gov]
CC:
Subject: RE: EPA AFEIS Comments
Sent:

Hi Jeff,

I've attached EPA's AFEIS comments. These comments are deliberative and not meant to be distributed. B(5) [redacted]

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

B(5)

B(5)

From: Leidy, Robert []
To: Simms, Jeffrey [jsimms@blm.gov]
CC:
Subject: RE: Information on Hydrolic Modeling I Put Together for the Rosemont EIS
Sent:

Thanks Jeff,

This is very helpful. [redacted]

B(5)

Thanks,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Simms, Jeffrey [mailto:jsimms@blm.gov]
Sent: Tuesday, July 16, 2013 4:36 PM
To: Leidy, Robert
Cc: Daniel Moore
Subject: Information on Hydrolic Modeling I Put Together for the

Rosemont EIS

Rob,

[redacted]

[redacted]

Cheers

From: Leidy, Robert []
To: Simms, Jeffrey [jsimms@blm.gov]
CC:
Subject: RE: National Conservation Lands System.
Sent:

Jeff,

Excellent. Thanks for taking time go get this to me so quickly!

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Simms, Jeffrey [mailto:jsimms@blm.gov]
Sent: Monday, July 08, 2013 12:14 PM
To: Leidy, Robert
Cc: Daniel Moore
Subject: Re: National Conservation Lands System

Here is the info you requested on the Draft EIS. BLM EQUITY

[redacted].

Cheers

On Mon, Jul 8, 2013 at 11:24 AM, Leidy, Robert <Leidy.Robert@epa.gov <mailto:Leidy.Robert@epa.gov> > wrote:

Hi Jeff,

[redacted] B(5) [redacted]

Best,

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

[redacted]

From: Simms, Jeffrey [jsimms@blm.gov]
To: Leidy, Robert [Leidy.Robert@epa.gov]
CC:
Subject: Re: Information on Hydrolic Modeling I Put Together for the Rosemont EIS
Sent: 17 Jul 2013 17:05:10 -0

Rob
this is Cienega Ranch Wetland. It's approximately 4.5 acres (calculated

[redacted]
BLM EQUITY
[redacted]

Cheers
><((((°> ><((((°> ><((((°> ><((((°>
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  ><((((°> ><((((°> ><((((°> ><((((°>
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"The nation behaves well if it treats its natural resources as assets which it must turn over to the next generation increased, and not impaired, in value." ~ President Theodore Roosevelt ~

According to historian Douglas Brinkley, Roosevelt believed that "saving natural wonders, wildlife species, timberlands and diverse habitats was a patriotic endeavor."

Jeff Simms
Fishery Biologist
Tucson Field Office
3201 E Universal Way
Tucson, AZ 85756
Phone 520-258-7209
Fax 520-258-7217

On Wed, Jul 17, 2013 at 12:35 PM, Leidy, Robert <Leidy.Robert@epa.gov <mailto:Leidy.Robert@epa.gov> > wrote:

Thanks Jeff,

[redacted]
B(5)
[redacted]

Thanks,

[redacted]

Rob

Robert A. Leidy, Ph.D.

U.S. Environmental Protection Agency

Wetlands Office (WTR-8)

75 Hawthorne Street

San Francisco, CA 94105

(415) 972-3463

From: Simms, Jeffrey [mailto:jsimms@blm.gov <mailto:jsimms@blm.gov>]
Sent: Tuesday, July 16, 2013 4:36 PM
To: Leidy, Robert
Cc: Daniel Moore
Subject: Information on Hydrolic Modeling I Put Together for the Rosemont EIS

Rob,

BLM EQUITY

Cheers