

Rosemont Copper Mine

Objection Review

Objection # (s): 0037-EmpireRanchFoundation; 0058-NWall

Resource Area(s): Noise – General (NOI-1)

Objection Issue:

- 0037-1: The DEIS does not include seismic studies detailed enough to elevate concerns about blasting. These studies must be required to determine the potential for structural damage to the historic buildings located at the Empire Ranch as well as the damage to the water table, wells, seeps, and springs at that location.
- 0058-9: Not to mention the inevitable noise pollution and the danger posed to anyone who has to use the highway to get to and from their homes.

Remedy Supplied by Objector (if any):

0037-1: 1. The Forest Service and the State Historic Preservation Office (SHPO) include the Empire Ranch Foundation as a party to the Section 106 Agreement; 2. The USFS must conduct a proper and independent study on the effect of vibrations, both airborne and ground on the Empire Ranch Headquarter Buildings and on the Las Cienegas National Conservation Area; 3. A mitigation plan (bond or other financial instrument) must be established for the Historic Buildings of the Empire Ranch, its implementation and funds must be administered by a neutral, third party, nonprofit organization; 4. The USFS should abandon this version of a FEIS and prepare and circulate for public review and comment a Revised DEIS or Supplemental Draft EIS.

Law, Regulation and/or Policy: Noise Pollution and Abatement Act of 1970 (Title IV of the CAA (42 U.S.C. 7627)); Federal Noise Control Act of 1972 (42 U.S.C. 4901 et seq.); Office of Surface Mining blasting performance standards (30 CFR 816.67)

Review Team Member Response:

The objectors contend the DEIS does not include seismic studies detailed enough to elevate concerns about blasting or to determine the potential for structural damage to the historic buildings located at the Empire Ranch. Also mentioned is the inevitability of noise pollution in general.

The results and conclusions of a supplemental noise study prepared for Rosemont Copper by Tetra Tech (2009e) set the framework for discussion of the affected environment for noise and vibration in the project area and the analysis of environmental consequences in Chapter 3 of the FEIS.

Comments received during the comment period for the DEIS regarding noise expressed a general concern about noise impacts from blasting activities on nearby private property. Blasting would generally be restricted to once per day between the hours of 9 a.m. and 4 p.m. during the operations phase. Noise contours from blasting are depicted in figure 106 in Chapter 3 of the FEIS [PR 047511_4, p. 960], and indicate that noise from the daily blast would not exceed the selected noise threshold for any nearby residences. The Forest Service reviewed the noise analysis that was conducted and determined that the analysis is adequate and that revision of the analysis is not necessary.

In addition to audible noise, blasting generates low-frequency airborne vibrations that can induce vibrations in buildings or other structures. Peak airborne pressure levels occur at frequencies below the range of human hearing and thus do not create any audible noise. The general requirements of the Office of Surface Mining blasting performance standards (30 CFR 816.67) state, “Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area” [PR 047511_4, p. 965].

The Forest Service previously responded to the effects of vibrations in the response to comments [PR 047511_7, p. G-51]. The issue of impacts of vibrations on structures at the Empire Ranch is addressed in Chapter 3 of the FEIS [PR 047511_4, p. 1038] where it is stated, “The possibility that nearby historic properties would be destroyed or damaged as a result of vibrations from mine construction and operations such as blasting and crushing rock was raised by the public as a potential adverse effect. The Empire Ranch Foundation commissioned a study that concluded that steady ground disturbance at a distance of 5 miles would result in deterioration of mortar between adobe blocks in four structures at the Empire Ranch, which is listed in the NRHP (Green 2008). To further evaluate the potential for vibration damage to historic structures, Tetra Tech (2009e) conducted a more detailed study based on modeled ground vibrations, sound measurements, noise modeling, and noise predictions for the area around the project area. Maximum blast noise levels were modeled for the project area and included surface blasting and in-pit blasting under various weather conditions. Low-frequency airborne and ground vibrations generated by blasting, which can also induce vibrations in buildings or other structures, were also analyzed. The study concluded, “Modeling of blast-generated ground vibration levels indicates that locations more than 0.5 mile from the blast site would not experience vibration intensities high enough to induce even minor cosmetic damage to buildings (such as cracking paint or plaster).” The study also reported that airborne vibrations may be capable of rattling loose objects or windows at a distance of 0.5 mile from the blast site, but they fall off rapidly 5 miles away from the site. Because Empire Ranch is more than 6 miles from the easternmost edge of the proposed mine pit, no impacts from vibrations or blasting are expected in any of the action alternatives.” No specific bond was required for potential impacts to Empire Ranch because the ranch is outside the area where impacts from vibrations or blasting are expected to occur [PR 047511_4, p. 1038]. There is a mitigation measure for the purposes of funding priority community projects, including community recreation, cultural, and environmental conservation projects [PR 047511_6, p. B-101].

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objector are not warranted. No remedy is required.

Review Team Member: Laura White, RHWR; David Johnson, Heritage Program Leader

Rosemont Copper Mine

Objection Review

Objection # (s): 0015-ABunting;

Resource Area(s): Noise – Mitigation (NOI-4)

Objection Issue:

- 0015-2: The USFS also ignored my mitigation request for set-aside funds for repairs to these historic structures should damage occur: “Impacts to historical structures at Empire Ranch are not anticipated. Please refer to the Noise section in Chapter 3 of the FEIS for more detailed information. Because the proposed project is not expected to impact these structures, there is not any mitigation for restoration required.” (USFS Response Document 322). Finally, I strongly object to the USFS response to a reasonable mitigation step-- a bond or some other financial instrument that guarantees that there will be funds available for repairs. USFS response document 322 states: “Because the proposed project is not expected to impact these structures, there is not any mitigation for restoration required.” Since the USFS is not certain that the project will impact the structures how can the USFS cavalierly state that ...”not any mitigation for restoration required.” Also, a statement in the USFS Response document 424 is factually incorrect: “The Empire Ranch headquarters is more than 8 miles distant from the mine operations area.” The straight line distance from Empire Ranch Headquarters to the proposed site of the mine pit is approximately 6 miles, as measured on Google Earth.

Remedy Supplied by Objector (if any):

0015-2: The USFS must conduct an independent study on the potential effect of airborne and ground vibrations on the historic headquarters buildings at the Empire Ranch on the Las Cienegas National Conservation Area. In addition, before any work can commence on the mine, Rosemont Copper must be required put up a bond or some other financial instrument that guarantees that there will be funds available for repairs. The funds must be administered by a neutral, third party, nonprofit organization.

Law, Regulation and/or Policy: Office of Surface Mining blasting performance standards (30 CFR 816.67); Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

The objector contends the Forest Service ignored a request for mitigation in the form of set-aside funds for repairs to the historic structures at Empire Ranch should damage occur due to

vibrations caused by mine blasting. The objector also contends the Forest Service is not certain about impacts so should not have dismissed the request for additional mitigation measures. A discrepancy in the distance estimate from the project site to Empire Ranch is pointed out.

The Forest Service consulted with tribes, cooperating agencies, and the Arizona State Historic Preservation Office and developed a Memorandum of Agreement (MOA), a Historic Properties Treatment Plan (HPTP) that describes the measures to monitor and mitigate adverse effects on National Register of Historic Places eligible historic properties [PR 047511_7, CD, PCS 322].

Clarification regarding response to comments indicating the distance from the mine to Empire Ranch was over 8 miles has been provided in the Errata as of February 18, 2014, to state that the Empire Ranch is more than 6 miles from the easternmost edge of the proposed mine pit. The Forest Service previously responded to the effects of vibrations in the response to comments [PR 047511_7, p. G-51]. The issue of impacts of vibrations on structures at the Empire Ranch is addressed in Chapter 3 of the FEIS [PR 047511_4, p. 1038] where it is stated, “The possibility that nearby historic properties would be destroyed or damaged as a result of vibrations from mine construction and operations such as blasting and crushing rock was raised by the public as a potential adverse effect. The Empire Ranch Foundation commissioned a study that concluded that steady ground disturbance at a distance of 5 miles would result in deterioration of mortar between adobe blocks in four structures at the Empire Ranch, which is listed in the NRHP (Green 2008). To further evaluate the potential for vibration damage to historic structures, Tetra Tech (2009e) conducted a more detailed study based on modeled ground vibrations, sound measurements, noise modeling, and noise predictions for the area around the project area. Maximum blast noise levels were modeled for the project area and included surface blasting and in-pit blasting under various weather conditions. Low-frequency airborne and ground vibrations generated by blasting, which can also induce vibrations in buildings or other structures, were also analyzed. The study concluded, “Modeling of blast-generated ground vibration levels indicates that locations more than 0.5 mile from the blast site would not experience vibration intensities high enough to induce even minor cosmetic damage to buildings (such as cracking paint or plaster).” The study also reported that airborne vibrations may be capable of rattling loose objects or windows at a distance of 0.5 mile from the blast site, but they fall off rapidly 5 miles away from the site. Because Empire Ranch is more than 6 miles from the easternmost edge of the proposed mine pit, no impacts from vibrations or blasting are expected in any of the action alternatives.” No specific bond was required for potential impacts to Empire Ranch because the ranch is outside the area where impacts from vibrations or blasting are expected to occur [PR 047511_4, p. 1038]. There is a mitigation measure for the purposes of funding priority community projects, including community recreation, cultural, and environmental conservation projects [PR 047511_6, p. B-101].

Recommended Remedy by Review Team Member (if any): The remedy suggested by the objector is not warranted. No remedy is required.

Review Team Member: Laura White, RHWR; David Johnson, Heritage Program Leader

Rosemont Copper Mine

Objection Review

Objection # (s): 0015-ABunting; 0117-CienegaWatershedPartnership

Resource Area(s): Noise – Effects (NOI-5)

Objection Issue:

- 0117-4: The modeling (Tetra Tech (2009e) study based on modeled ground vibrations, sound measurements, noise modeling, and noise predictions) may be insufficient unless the underlying sediments are taken into account and request further monitoring and potential mitigation.
- 0015-1: The USFS did not respond to my concern about possible damage from ground or air vibrations to the historic structures at the Empire Ranch headquarters by conducting requested additional studies by independent experts. Rather, they chose to accept the very limited study of airborne and ground vibrations conducted by a Rosemont contractor, Tetra Tech: “Airborne and ground vibrations caused by blasting were also modeled. Subsonic vibrations are of concern only with respect to property damage; therefore, results are compared only with the nearest residential receptor to the southeast (House A) and northeast (House H)..” Further, as stated in the FEIS (Volume 2, Chapter 3, p. 963): “At a high enough level, airborne vibrations can rattle loose objects or windows. At even higher intensities, the potential exists for cosmetic damage, such as cracks in stucco, paint, or plaster.” The very limited analysis conducted does not take into account the potential impact of adobe structures that are over 140 years old.

Remedy Supplied by Objector (if any):

0117-4: The finding based on the modeling be monitored at the time blasting commences at multiple locations from the blasting including the Empire Ranch buildings. Mitigation should include the development of a monitoring plan with quantitative and qualitative measures agreed to by the Bureau of Land Management and SHPO for those buildings and the plan should identify specific steps to be taken if the monitoring shows impacts.

0015-1: The USFS must conduct an independent study on the potential effect of airborne and ground vibrations on the historic headquarters buildings at the Empire Ranch on the Las Cienegas National Conservation Area. In addition, before any work can commence on the mine, Rosemont Copper must be required put up a bond or some other financial instrument that guarantees that there will be funds available for repairs. The funds must be administered by a neutral, third party, nonprofit organization.

Law, Regulation and/or Policy: Office of Surface Mining blasting performance standards (30 CFR 816.67); Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

Objector 0117 contends the modeling (Tetra Tech (2009e) study based on modeled ground vibrations, sound measurements, noise modeling, and noise predictions) may be insufficient unless the underlying sediments are taken into account and request further monitoring and potential mitigation.

Objector 0015 contends the USFS did not respond to concerns about possible damage from ground or air vibrations to the historic structures at the Empire Ranch headquarters by conducting requested additional studies by independent experts and contends the Tetra Tech study is very limited.

As indicated in the response to comments, the Forest Service consulted with tribes, cooperating agencies, and the Arizona State Historic Preservation Office and developed a Memorandum of Agreement (MOA), a Historic Properties Treatment Plan (HPTP) that describes the measures to monitor and mitigate adverse effects on National Register of Historic Places eligible historic properties [PR 047511_9, Response to Public Concern Statement G-322].

The Forest Service previously responded to the effects of vibrations in the response to comments [PR 047511_7, p. G-51]. The issue of impacts of vibrations on structures at the Empire Ranch is addressed in Chapter 3 of the FEIS [PR 047511_4, p. 1038] where it is stated, “The possibility that nearby historic properties would be destroyed or damaged as a result of vibrations from mine construction and operations such as blasting and crushing rock was raised by the public as a potential adverse effect. The Empire Ranch Foundation commissioned a study that concluded that steady ground disturbance at a distance of 5 miles would result in deterioration of mortar between adobe blocks in four structures at the Empire Ranch, which is listed in the NRHP (Green 2008). To further evaluate the potential for vibration damage to historic structures, Tetra Tech (2009e) conducted a more detailed study based on modeled ground vibrations, sound measurements, noise modeling, and noise predictions for the area around the project area. Maximum blast noise levels were modeled for the project area and included surface blasting and in-pit blasting under various weather conditions. Low-frequency airborne and ground vibrations generated by blasting, which can also induce vibrations in buildings or other structures, were also analyzed. The study concluded, “Modeling of blast-generated ground vibration levels indicates that locations more than 0.5 mile from the blast site would not experience vibration intensities high enough to induce even minor cosmetic damage to buildings (such as cracking paint or plaster).” The study also reported that airborne vibrations may be capable of rattling loose objects or windows at a distance of 0.5 mile from the blast site, but they fall off rapidly 5 miles away from the site. Because Empire Ranch is more than 6 miles from the easternmost edge of the proposed mine pit, no impacts from vibrations or blasting are expected in any of the action alternatives.” No specific bond was required for potential impacts to Empire Ranch because the ranch is outside the area where impacts from vibrations or blasting are expected to occur [PR 047511_4, p. 1038]. There is a mitigation measure for the purposes of funding priority

community projects, including community recreation, cultural, and environmental conservation projects [PR 047511_6, p. B-101].

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objectors are not warranted. No remedy is required.

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