



# United States Department of the Interior



BUREAU OF LAND MANAGEMENT  
Ridgecrest Field Office  
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## **DECISION RECORD**

### **ENVIRONMENTAL ASSESSMENT DOI-BLM-CA-D050-2014-014-EA**

For the  
*Exploratory Drilling of the Dragonfly Placer Claims*

#### **DECISION:**

In accordance with Title 42 USC 4321 et seq., it is my decision to approve plan of operations CACA-53193. I authorize Glacial Minerals, Inc. to drill and explore on the Dragonfly unpatented placer claims subject to certain terms and mitigation measures contained in Appendix A, attached. This proposed action was received by my office October 25, 2013 and summarized as the Proposed Action Alternative in environmental assessment DOI-BLM-CA-D050-2014-014-EA. My authority for this decision derives from the Federal Land Policy and Management Act (43 USC 1732) and associated Surface Management regulations 43 CFR 3809.

I find that the action conforms to the California Desert Conservation Area (CDCA) Plan (1980) and its amendment, the Western Mojave Management (WEMO) Plan (Record of Decision March 2006), as described in the environmental assessment. I have determined the proposed action will not cause unnecessary or undue degradation and find it has no significant impact to public lands or resources. Environmental assessment DOI-BLM-CA-D050-2014-014-EA, the Finding Of No Significant Impact and this Decision constitute the Bureau's compliance with the National Environmental Policy Act. Preparation of an environmental impact statement is not required.

My decision is based on

- the analysis and recommendations of environmental assessment DOI-BLM-CA-D050-2014-014-EA;
- my Finding Of No Significant Impact for this action, and;
- my consideration of public comments received and summarized below.

#### **PUBLIC INVOLVEMENT:**

On May 20, 2014 Environmental Assessment DOI-BLM-CA-D050-2014-014-EA was publicly posted at the Ridgecrest Field Office website ([www.ca.blm.gov/ridgecrest](http://www.ca.blm.gov/ridgecrest)) and the California BLM's official webpage for environmental documents at <http://www.blm.gov/ca/st/en/info/nepa.html>. The document's URL address is

[http://www.blm.gov/style/medialib/blm/ca/pdf/ridgecrest/ea/2014.Par.89283.File.dat/EA\\_DragonflyProject.pdf](http://www.blm.gov/style/medialib/blm/ca/pdf/ridgecrest/ea/2014.Par.89283.File.dat/EA_DragonflyProject.pdf).

The 30-day comment period closed June 17, 2014.

Comments were received from the Kern County Planning & Community Development Department, the Kerncrest Chapter National Audubon Society, the Tehachapi District of California Department of Parks & Recreation, the Red Rock Canyon Interpretive Association, citizen Mark R. Faull, and the Desert Tortoise Council. Two comments were received from the Center for Biological Diversity: one comment from a CBD staff member, and; approximately 4400 substantially identical copies of a comment emailed through a Center for Biological Diversity website

([http://action.biologicaldiversity.org/p/dia/action3/common/public/?action\\_KEY=15782](http://action.biologicaldiversity.org/p/dia/action3/common/public/?action_KEY=15782)). See Appendix B for copies of the 7 comments and a representative of the 4400 identical emails.

The comments are summarized and responded to as:

*Comment: The El Paso Mountains are within a special Limited Use area inappropriate for mining exploration.*

Response: No part of the affected mining claims is withdrawn from operation of the Mining Laws, and no BLM management plan has proposed such withdrawal. As specified in BLM regulations and Table 1 of the CDCA Plan, limited use lands are open to entry under the Mining Law of 1872 and mineral-related operations subject to [43 CFR 3809.11](#).

*Comment: The exploration drilling project is inappropriately close to, or may have indirect impact to special areas including the El Paso Wilderness, Red Rock Canyon State Park, the Last Chance Canyon Area of Critical Environmental Concern, and the Last Chance Canyon Archaeological District.*

Response: Figure 1 of the EA discloses the distance of the proposed drilling from the El Paso Wilderness and the Last Chance Canyon Area of Critical Environmental Concern (ACEC). The inventory unit surrounding the Dragonfly claims was found not to contain wilderness characteristics. Section 3.1 of the EA discloses that wilderness, parks, and areas of critical environmental concern were not carried forward for analysis because they are not present and/or have negligible potential to be affected by the proposed action. The project relationship to the Last Chance Canyon Archaeological District is disclosed in Section 3.5 and analyzed in Section 4.4 of the EA.

The proposed action shows that access to the claims is via BLM route EP-15 (route EP-155 on some travel management maps), which is the main travel route between this report area and California Highway 14. This designated open route provides motorized access across BLM-managed lands including parts of Last Chance Canyon ACEC and a portion of Red Rock Canyon State Park. Given that the CDCA Plan and WEMO Plan provide for motorized access on designated open routes, the usage of this route by motorized traffic fully conforms to those land management plans and is within the scope of their associated environmental impact statements. Section 3.8 of the EA discloses that the El Paso management area received an estimated 58,000 visits in fiscal year 2013. This leads me to conclude that the

traffic associated with this drilling project will not cause an impact to EP-15 beyond what it already receives. No impact analysis of route EP-15 is needed.

Section 2.1 and Section 3.8 of the EA reference various Travel Management Area Maps covering the western El Paso Mountains (for example see Map 7, TMA 7 at [http://www.blm.gov/ca/st/en/fo/cdd/west\\_mojave\\_wemo/WEMO\\_TMA\\_Maps.html](http://www.blm.gov/ca/st/en/fo/cdd/west_mojave_wemo/WEMO_TMA_Maps.html)). These publicly-available maps show that BLM-administered lands and a small part of Open Route EP-15 lie within the boundaries of Red Rock Canyon State Park. Public Land Order [7260](#) withdraws the Public Lands within those boundaries from mineral location and entry pending eventual inclusion into the California state park system. It has no effect on my authority to approve usage of existing routes on BLM public lands.

The proposed action is within the Last Chance Canyon Archaeological District. The area of potential effect for this drilling program has been surveyed and assessed in keeping with the [Statewide Heritage Protocol Agreement](#) of February 2014. No adverse effect is expected from this action, and all necessary steps have been taken to identify, record and determine effects on cultural resources with the area of potential effect. BLM is in compliance with Section 106 of the National Historic Preservation Act.

*Comment: BLM must amend the West Mojave land use plan prior to permitting usage of any route other than open routes, because BLM land management plans prohibit usage of any route(s) other than open routes.*

The route designation and travel management requirements of this management plan are written in conformance with the Off-Road Vehicle regulations contained in Title 43, Part 8340 of the Code of Federal Regulations (reference Section 3.5 of the Western Mojave Management Plan). These Federal regulations define an off-road vehicle as any motorized vehicle capable of travel overland excluding vehicles whose use is expressly authorized by the authorized officer ([43 CFR 8340.0-5\(a\)\(3\)](#)). My authorization of drilling-related vehicles is explicitly excluded from this regulatory definition of off-road vehicles and, by extension, not subject to the WEMO decisions for managing off-road vehicles.

*Comment: BLM should analyze large-scale mining of the Dragonfly claims as a reasonably foreseeable development.*

Response: Reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable based on known opportunities or trends. I have no means to know whether these present claims are capable of supporting a mine of any size, and cannot speculate on the future results of an unfinished sampling program.

*Comment: The presented baseline information for resources, most especially groundwater, is insufficient and needs more detail for appropriate NEPA analysis.*

Response: The Council on Environmental Quality regulations at 40 CFR 1502.22 and the BLM NEPA Handbook (BLM 2008) address incomplete and unavailable information. The BLM must obtain information if it is “relevant to reasonably foreseeable significant adverse impacts,” if

it is “essential to a reasoned choice among alternatives,” and if “the overall cost of obtaining it is not exorbitant.” (40 CFR 1502.22).

Figure 2 of the EA shows all proposed drillsites lie roughly 80 to 200 feet above the bottom of Last Chance Canyon (see figure attached). The same maps & figures demonstrate a lack of springs or surface water at these claims and immediate bottom of Last Chance Canyon, reasonably indicating that any unconfined groundwater levels are at an elevation below the floor of Last Chance Canyon. No significant amount of water injection or pumping is contemplated by this proposed action, nor will the holes be abandoned in a manner that allows communication between aquifers (reference bentonite plugging in EA Section 2.1 and in Appendix A, attached). While the proposed action contemplates possible usage of drilling mud if necessary, the possibility is considered small enough that no water trucks or mud pits are included in the proposed action. I understand the Trusonic system described this plan of operations can incorporate a hydraulic system with drilling mud, but primarily relies on a percussion hammer driven by compressed air. For all these reasons, plus the small scale of this proposal, the likelihood of any effect to groundwater resources is less than significant, and not essential to a reasoned choice among alternatives. NEPA documents are required to concentrate on issues truly significant to the action in question, and I am required to take a hard look at issues pertinent to my decision on a proposed action. NEPA discourages amassing encyclopedic detail on subjects that will not affect my choice between alternatives.

In addition, this information is unavailable without undertaking drilling. The most practical method for discovering direct, observable and quantifiable samples of underground resources (whether water or minerals) is through drilling. The act of obtaining direct, quantifiable groundwater samples would, in itself, involve much the same methods and the same effects as the proposed action. While the proposed action concerns acquiring baseline information on underground mineral resources, the same action may also be useful at providing baseline information for determining the presence or absence of groundwater.

Comment: *The environmental assessment had no details of the endemic land snails, fringe-toed scorpions, martini’s moth and Red Rock Canyon Monkey Flower.*

Response: The BLM Sensitive Species List does not include the above invertebrates. The Red Rock Canyon Monkeyflower is on the BLM sensitive species list. However, Section 4.3 of the Environmental Assessment provides that “Because all work will occur within existing dirt roads, vegetation will be avoided. No vegetation is proposed to be removed. Therefore, no direct or indirect impacts to vegetation will occur.” Given that no impacts to vegetation will occur, this includes no impacts to the Red Rock Canyon Monkey Flower.

Comment: *Concern to avoid impacts to sensitive species such as eagles, owls, bats and Mohave ground squirrels.*

Response: Section 4.3 of the EA finds this region of the El Paso Mountains has the potential for occurrence of eagle(s), and various species of bat, but that impacts will be negligible to those species.

The El Paso Mountains are within the range of the Mohave Ground Squirrel. Because native habitats will be avoided and no vegetation is proposed to be removed, no direct impacts will occur to Mohave Ground Squirrel. Noise and human presence may result in some indirect, short-term impact, which impact is placed in context with an estimated 58,000 recreational visits/year to this general region of public lands (refer E.A. Section 3.8). Measures to mitigate impacts to Mohave Ground Squirrel were included in Section 4.3 of the EA and are included with this Decision Record.

*Comment: Concern to avoid conflicts with a Bird of Prey Closure within Red Rock Canyon State Park between February 1 to July 1.*

Response: The Red Rock Canyon State Park Resource Inventory indicates the park Bird of Prey closure applies to Scenic Canyon and Nightmare Gulch in the southwest quarter of the park (inventory at [http://www.parks.ca.gov/pages/21299/files/res\\_inv\\_summary.pdf](http://www.parks.ca.gov/pages/21299/files/res_inv_summary.pdf)). The proposed action will not affect any lands included within this Closure.

*Comment: Disagreement with BLM's choice to analyze only two alternatives, and not analyze an alternative restricting all use to designated open routes.*

Response: Under NEPA, a reasonable alternative is defined with reference to the purpose and need of the proposed action. In this case BLM's purpose and need is to respond to an application to drill 12 specific locations submitted per Surface Management regulations 43 CFR 3809. Some, but not all the proposed locations are along designated open routes. An alternative restricted only to open routes would be inconsistent with the proposed action because it would omit analysis of several proposed drill sites.

The Surface Management regulations balance the rights of a claimant under the Mining Law of 1872 with the Congressional mandate to prevent unnecessary or undue degradation of public lands. BLM is free to disapprove or withhold approval of a plan, or part of a plan, if analysis reveals it will result in "unnecessary or undue degradation of public lands" (43 CFR 3809.411(d)(3)(iii)). Based on the analysis in the environmental assessment, the BLM has determined that the proposed action would not result in unnecessary or undue degradation.

*Comment: The EA did not discuss additional area(s) needed for rig setup and takedown, or use of sanitary facilities.*

Response: The Trusonic drill rig is a self-contained unit not needing additional land for rig setup and takedown. Any contractor for this project is subject to health and safety programs for workers and the public, and sanitary facilities/arrangements will be required.

*Comment: NEPA requires more analysis of mitigation measure effectiveness.*

Response: Environmental measures or practices are only termed "mitigation measures" under NEPA if they have not been incorporated into the proposed action or alternatives (BLM NEPA Handbook H-1790-1, Section 6.8.4). When such measures are incorporated into the proposed action or alternatives they are called design features, not mitigation measures. A large part of the environmental/reclamation procedures of this operation are thus part of the proposed

action, rather than mitigation measures imposed or ordered by BLM. Operators have a right to appeal measures forcibly ordered by BLM, including measures ordered as a result of NEPA analysis (43 CFR 3809.800). Surface Management regulations grant BLM authority to enforce compliance of applicant-committed measures placed by operators into their own plans (43 CFR 3809.601).

*Comment: Concern for impacts to the Last Chance Canyon Historic District, compliance with the National Historic Preservation Act and concern for adequate consultation with Tribal governments.*

Response: The action is disclosed to lie within the Last Chance Canyon Archaeological District. The area of potential effect has been surveyed and assessed in keeping with the [Statewide Heritage Protocol Agreement](#) of February 2014. No adverse effect is expected from this action, and all necessary steps have been taken to identify, record and determine effects on cultural resources with the area of potential effect. BLM is in compliance with Section 106 of the National Historic Preservation Act. Local tribal governments have been consulted and will receive copies of this Decision.

*Comment: Concern for impacts to significant paleontological resources.*

Response: Geologic maps (referenced in Section 3.7 of the EA) show the surface of these claims is composed largely of Quaternary Alluvium and, in some parts of the drilling area, exposures of the lower part of the Goler Formation. Small amounts of vertebrate fossils have been found and collected in the upper member(s) of the Goler Formation exposed elsewhere in the El Paso Mountains. BLM is not aware of any significant fossils having been collected in the lower portion of the Goler Formation exposed in this assessment area.

*Comment: Suggestions that the proposed biological monitor:*

- *Precede heavy equipment entering/leaving the area.*
- *Ensure that vehicles enter/leave the area together and in singlefile.*
- *Ensure that no tortoises are within any tortoise exclosure fence.*
- *Contact BLM immediately if any injured/dead tortoise is encountered.*
- *Analyze a much larger cumulative impact area if a larger mine is pursued.*
- *Ensure avoidance & mapping of any Mohave fish-hook cactus encountered.*
- *Ensure any open hole is either under direct supervision (of the monitor) or appropriately fenced to exclude tortoise until the hole is backfilled.*
- *Provide a report available for public review.*

Response: I consider those suggestions reasonable and have included them in the conditions of approval (refer Appendix B).

*Comment: While the cumulative surface disturbance of the drill sites is less than one acre, the full extent of ground disturbance of access roads (existing and proposed) is not stated, or the total amount of cubic yards of material that will be displaced. It is uncertain whether the proposed cumulative disturbance does, or does not meet the threshold for compliance with the California Surface Mining and Reclamation Act (SMARA).*

Response: The description of the proposed action, Section 2.1, states that all work will remain within existing roadways. The project proposal calls for no new road construction.

The proposed drill hole diameter is 6 5/8" (approximately 0.552083 feet). Presuming each of the 12 holes is drilled 165' deep, the maximum total volume of drill hole(s) and cuttings is approximately

$$\begin{aligned} 12(165 \text{ ft})\pi r^2 &= 12(165 \text{ ft})(3.14159)(0.27604166 \text{ ft})^2 \\ &= (1980 \text{ ft})(0.239386 \text{ ft}^2) = 474 \text{ ft}^3 \\ &\approx \underline{17\frac{1}{2} \text{ yd}^3} \end{aligned}$$

Surface Management performance standards require all operations to comply with pertinent state law (43 CFR 3809.420(a)(6), included below). This requirement includes requirement with the California Surface Mining and Reclamation Act (SMARA). California procedures call for designating lead agencies at local level for implementation of SMARA, in this case the Kern County Planning Department. Operators must apply to and acquire permits from the Kern County prior commencing operations. Mining-related operations on Public Land within the County of Kern are governed by a Memorandum Of Understanding signed between BLM and the County of Kern, which states the County and BLM shall work cooperatively to assure conformance with all applicable local/State/Federal regulations. The operations exempted from the provisions of this MOU include:

- Prospecting for, or the extraction of, minerals for commercial purposes which does not involve either the removal of more than 1,000 cubic yards of minerals, ores, and overburden, and/or involve more than one acre in any one location.
- Such other surface mining operations the BLM, State or County may determine to be of an infrequent nature and which involve only minor surface disturbance.

The Dragonfly drilling project is a one-time operation having all work limited to existing roadways, and so involves only minor surface disturbance.

**Appeal and/or Review Procedures:**

If you disagree with and are adversely affected by this decision, you may request that the BLM California State Director review this decision. An adversely affected party may bypass State Director review and directly appeal a BLM decision under this subpart to the Office of Hearings and Appeals (OHA) under part 4, Title 43 of the Code of Federal Regulations.

If you request a California State Director review, the request must be received in the BLM California State Office at 2800 Cottage Way, Suite W-1623, Sacramento, CA 95825-1886, no later than 30 calendar days after you receive or have been notified of this decision. The request for State Director Review must be filed in accordance with the provisions in 43 CFR 3809.805. This decision will remain in effect while the State Director Review is pending, unless a stay is granted by the State Director. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

If the State Director does not make a decision on your request for review of this decision within 21 days of receipt of the request, you should consider the request declined and you may appeal this decision to the Interior Board of Land Appeals (IBLA). You may contact the BLM California State Office to determine when the BLM received the request for State Director Review. You have 30 days from the end of the 21-day period in which to file your Notice of Appeal with this office at the Ridgecrest Field Office, which we will forward to IBLA.

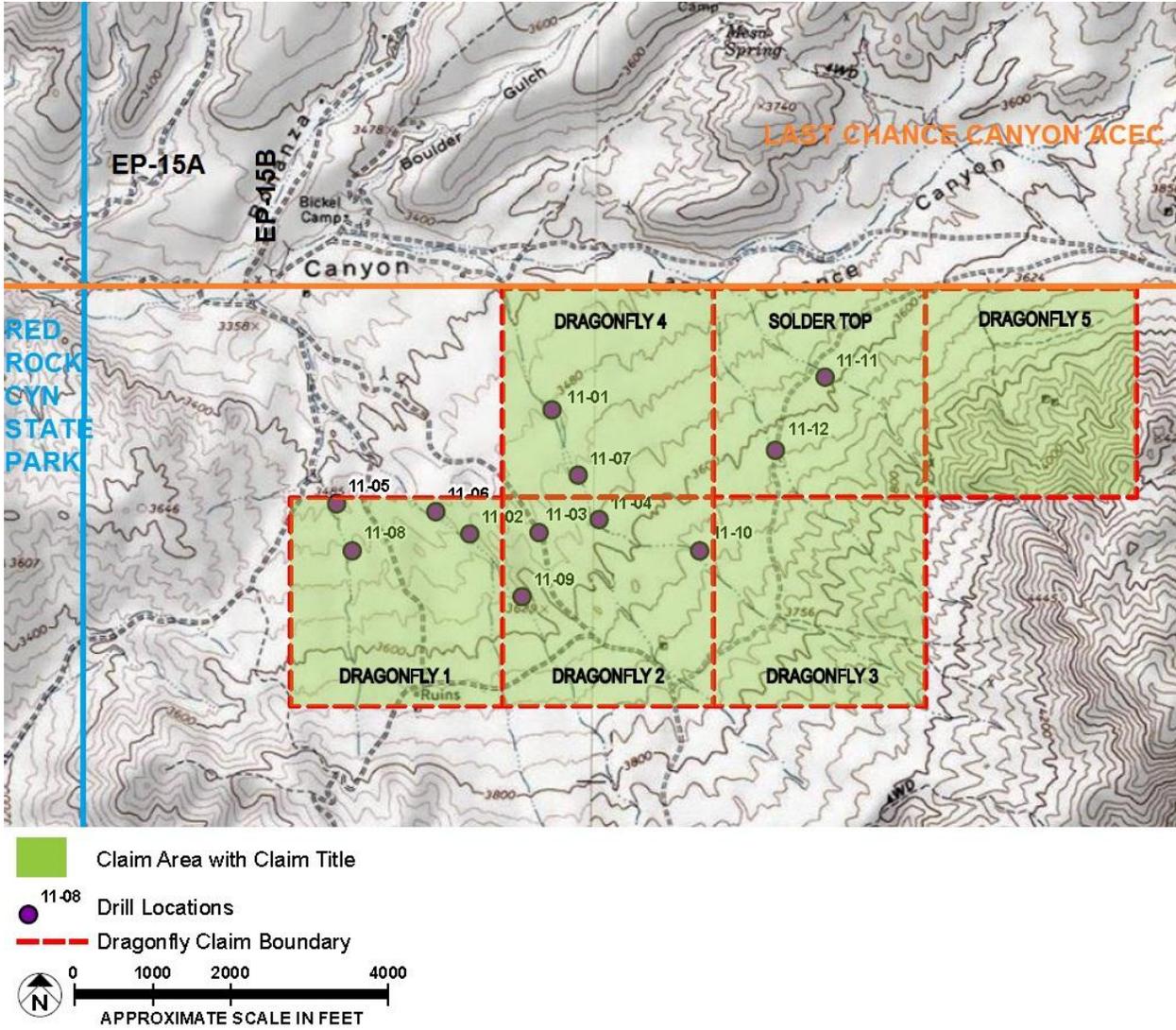
If you wish to bypass a State Director Review, this present decision may be appealed directly to the IBLA in accordance with the regulations at 43 CFR 3809.80 1(a)(1). Your Notice of Appeal must be filed in this office at the Ridgecrest Field Office within 30 days from receipt of this decision. As the appellant you have the burden of showing that the decision appealed from is in error. Enclosed is BLM Form 1842-1 for information on taking appeals to the IBLA. This decision remains in effect while the IBLA reviews the case, unless a stay is granted by the IBLA. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

If you wish to file a petition pursuant to regulations 43 CFR 4.21 for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the IBLA, the petition for a stay must accompany your Notice of Appeal. Copies of the Notice of Appeal and petition for a stay must also be submitted to each party named in the decision and to the Office of the Solicitor, Pacific Southwest Region at 2800 Cottage Way, Room E-2753, Sacramento, CA 95825-1890. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted based on the standards listed below.

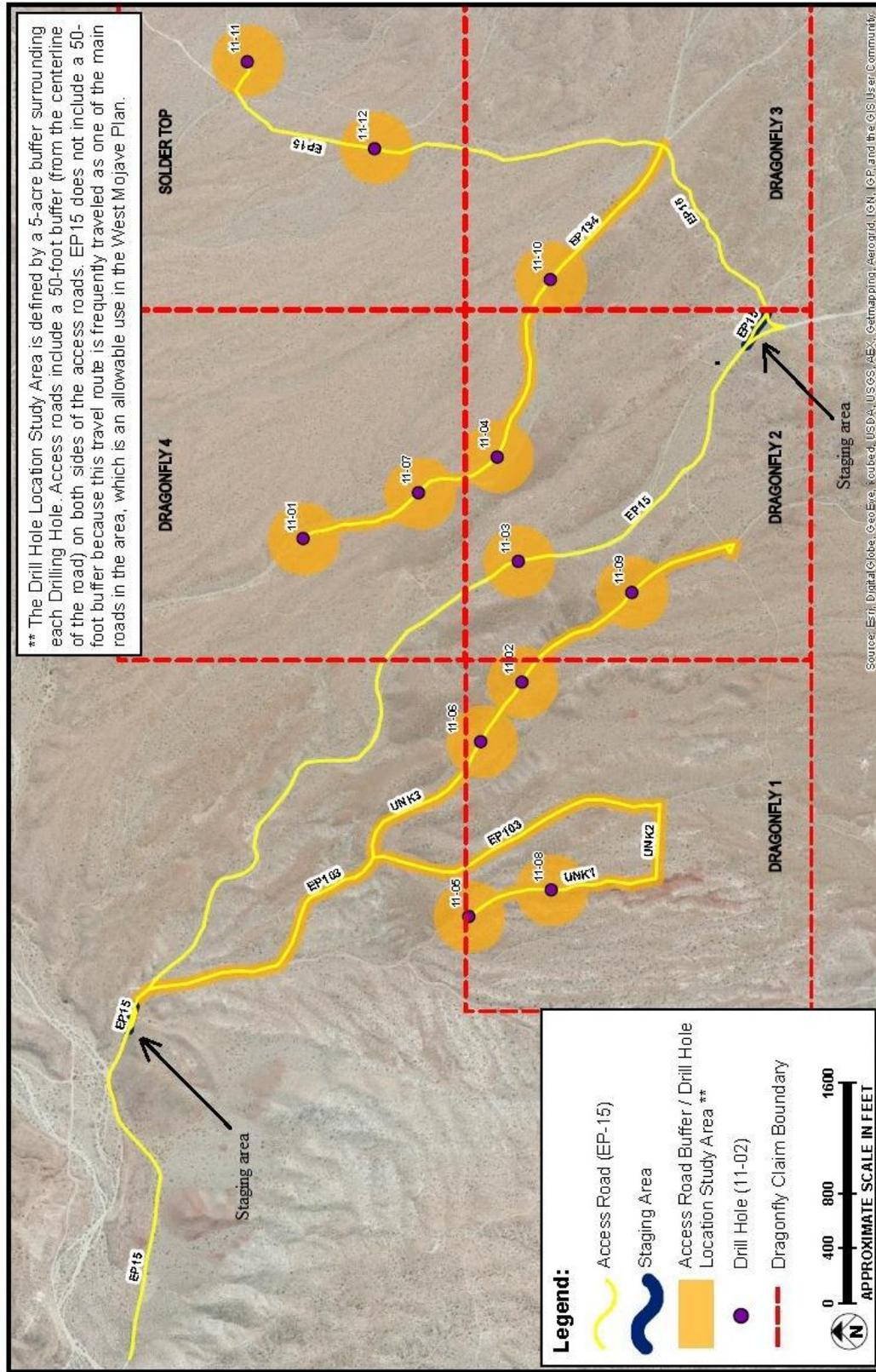
1. The relative harm to the parties if the stay is granted or denied,
2. The likelihood of the appellant's success on the merits;
3. The likelihood of immediate and irreparable harm if the stay is not granted; and
4. Whether the public interest favors granting the stay.

/s/ Carl B. Symons  
Carl Symons  
Ridgecrest Field Manager

11/26/2014  
Date



Topographic map of the proposed action, adapted from Figure 2 of the Dragonfly Environmental Assessment.



SOURCE: Glacial Minerals, Inc. - October 2011

**Figure 3. Proposed drilling locations, access, and designation of access routes where known. (Status of designated BLM routes in the El Paso Mountains are available at Maps 7 and 8, Travel Management Area 7 of the West Mojave Route Network Project, available at [http://www.blm.gov/ca/st/en/fo/cdd/west\\_mojave\\_wemo\\_TMA\\_Maps.html](http://www.blm.gov/ca/st/en/fo/cdd/west_mojave_wemo_TMA_Maps.html))**

## **APPENDIX A- Conditions of Approval**

### **Plan of Operation CACA-53193 is authorized subject to**

1. The standards of 43 CFR 3809.420, copy attached.
2. The protocols and measures committed to by Glacial Minerals Inc. and incorporated into their plan of operations, including:
  - a) As a standard operating procedure, the drilling rig and attending vehicles will be washed prior to entering the Project area and before they leave the state highway.
  - b) Vehicles will drive at speeds not to exceed 15 miles per hour (mph) within all travel routes.
  - c) Cross-country vehicle use by Project personnel is prohibited at all times.
  - d) Dogs will not be allowed at work sites.
  - e) The operator shall designate a biological monitor who will be responsible for overseeing compliance with state protocols and standard operating procedures for coordination with the BLM. The monitor will be on site during all drilling activities and will have the authority to halt all drilling activities.
  - f) Prior to mobilization of the drill rig to a drill site, a temporary exclusion fence will be erected around the drilling location at least 50 feet in each direction from the extent of the drilling equipment along each side of the road. Once the drilling rigs and trucks are in place, temporary exclusion fencing will be erected at each end of the work area across the roadway. All temporary exclusion fencing will be secured at the bottom (e.g., partially buried, straw wattle keyed in along the bottom) to ensure there are no gaps in the fencing such that no wildlife can dig or crawl under the exclusion fencing.
  - g) No access roads shall be bladed. Access to the drill holes study areas shall be restricted to the routes of travel indicated on Figure 3 of the environmental assessment. Prior to mobilization, the access routes will be flagged with survey tape to minimize disturbance of vegetation. No access of previously unsurveyed roads or routes will be permitted.
  - h) Project personnel will receive on-site (“tailgate”) sensitivity training for both biological and cultural resources prior to the start of work.
  - i) Project personnel will inspect under their vehicles prior to starting engines and moving vehicles to ensure no desert tortoises or other wildlife are found. If a desert tortoise is present under a parked vehicle, the Project personnel shall carefully move the vehicle only when necessary and when the desert tortoise would not be injured by moving the vehicle, or the Project personnel shall wait for the desert tortoise to move out from under the vehicle.
  - j) Upon locating an injured or dead tortoise (either Project related or otherwise) within the vicinity, the environmental monitor will notify the BLM Field Office immediately. The information provided as part of the notification will include the date and time of the finding or incident (if known), the location of the carcass or injured animal, a photograph, the cause of death (if known), and other pertinent information.
  - k) The excavated top 6 inches of soils removed during drilling from access roads shall be stockpiled on the drill site area. Immediately following completion of the exploratory drilling, the stockpiled soils shall be placed back in the top portion of the drill holes. After site rehabilitation, all exclusionary fences shall be removed.

- l) Work will be accomplished in single shifts during daylight hours (typically 7:00 AM to 5:00 PM). No nighttime, early morning, or dusk operations will be permitted.
- m) Debris and waste materials will be removed. All subsurface exploration waste will be handled according to the COGCC 900 Series rules ([https://cogcc.state.co.us/RR\\_Docs\\_new/rules/900Series.pdf](https://cogcc.state.co.us/RR_Docs_new/rules/900Series.pdf)), which rules include isolation and disposal offsite in an approved facility. All drill holes will be backfilled upon the completion of down hole geophysical surveys. Backfill will be compacted and smoothed at the ground surface so as to be indistinguishable from the surrounding dirt road.
- n) All disturbed areas affected by drilling or subsequent operations will be reclaimed as early as possible and as nearly as practicable to their original condition and will be maintained to control dust and minimize erosion.
- o) All trash will be disposed of properly off site. All other wastes will be collected and disposed of in a manner consistent with existing laws and regulations.
- p) Prior to commencing operations, the operator shall comply with the reclamation bonding requirements of 43 CFR 3809.500, which includes the cost to reclaim operations as if BLM were hiring a third-party contractor to perform reclamation after the operator has vacated the project area, plus BLM's cost to administer a reclamation contract (43 CFR 3809.554).
- q) All of the drilled material—with the exception of the top 6 inches of topsoil—from the drill holes will be transported off site. Aside from concrete/cement slurry and bentonite chips, backfill will consist of imported clean sand and gravel or whatever import material the BLM prefers. The drill holes will be backfilled in accordance to BLM regulations.
- r) All exploratory work is to be conducted within a single span of consecutive weekdays.
- s) Measures will be taken during periods of nonoperation to maintain the area in a safe and clean manner and to reclaim the land to avoid erosion and other adverse impacts. The drill rig may occupy a site overnight if a drill hole and sampling are not complete by the end of a work day. Under such circumstances, the open drill holes will be covered, possibly with plywood held down by the drill itself, and barricaded by the drill rig and support vehicle. Signage to alert passing traffic will be in place per BLM specifications. The temporary fencing will *remain* in place.

**Mitigation measures specified by BLM include:**

- 3. Measures to mitigate impacts to soil or water include:
  - a) If groundwater is encountered the operator will record and provide BLM downhole information including depth to bedrock (if encountered), depth to water, total dissolved solids, and other pertinent information.
  - b) All attempts will be made to prevent contaminating native groundwater by allowing surface water or material to infiltrate the drill hole.
  - c) As per the reclamation measures described in the proposed action, drillholes will be plugged with a bentonite slurry or bentonite pellets, with at least a five-foot cement plug at the surface to impede any entrance of surface water.

#### 4. Mitigation measures for biological resources:

- a) **Nesting Birds:** If possible, work will be conducted outside of the nesting season. If work must be conducted during nesting season, a pre-drilling survey will be conducted within 7 days prior to initiation of drilling activities to determine the presence of any active nests. To be in compliance with the International Migratory Bird Act, no birds may be harmed or killed. If active nests are located during pre-drilling surveys, drilling activities within 100 feet of the nest (200 feet for raptors) will be postponed or halted until the nest is vacated and juveniles have fledged, as determined by the Project biologist. Drill will be postponed if the biologist notes evidence of a second nesting attempt. Distance limits for drilling activities will be established to avoid an active nest. Limits will be defined with flagging, fencing, or other appropriate barriers and drilling personnel will be instructed about the sensitivity of nest areas. The project biologist should serve as a monitor during those periods when drilling activities will occur near (within 300 feet) active nest areas to ensure that no inadvertent impacts will occur. The results of the pre-drilling survey and the avoidance measures taken will be submitted to the BLM within 30 days of completion of the surveys and/or drilling activity monitoring.
- b) **Tortoise:**
- A temporary tortoise-proof exclusion fence will be erected around each drill hole location, at least 100 feet long (50 feet in each direction of the drilling hole or the extent of the drilling equipment if asymmetric to the drill location) along each side of the road. Once the drilling rigs and trucks are in place, temporary exclusion fencing will be erected at the ends of the work area (i.e., perpendicular to the road) to ensure that no desert tortoise enters the work area while drilling is being conducted. All temporary tortoise-proof exclusion fencing should be secured at the bottom (e.g., partially buried or have straw wattle keyed in along the bottom) to ensure there are no gaps in the fencing and no wildlife can dig or crawl under the exclusion fencing.
  - Vehicles will drive no greater than 15 miles per hour within travel routes.
  - Glacial Minerals shall designate a Field Contact Representative (FCR) who will be responsible for overseeing compliance with stipulations and for communicating with the BLM. The FCR may be a crew chief or field supervisor or a contracted biologist. The FCR must be on-site during all drilling activities and must halt all drilling activities that are in violation of the stipulations. The FCR shall have a copy of all stipulations when work is being conducted on-site.
  - All persons who work onsite shall participate in a desert tortoise education program prior to initiation of field activities. The education program will be presented prior to conducting activities and may consist of a class presented by a qualified biologist or a video approved by the BLM.
  - No desert tortoises shall be handled as a part of this project.
  - Burrows identified by the qualified biologist shall be avoided. Previously disturbed areas shall be utilized for the stockpiling of excavated material, storage of equipment, and parking of vehicles.
  - Within 90 days of terminating activities, the FCR shall submit a report documenting the effectiveness of the project protocols and also report any observations of desert tortoises.
  - If any injured or dead tortoise is found within the claim, the FCR will immediately notify the BLM Field Office. The information must include the date and time of

the observation, location, a photograph, cause of death, and other pertinent information.

- Project workers shall inspect under their vehicles before moving them to ensure that no tortoises are there. If a desert tortoise is present, the worker shall wait for it to move out from under the vehicle.
  - All trash and food items shall be promptly contained within closed, raven-proof containers. These shall be removed from the area at the end of the day so that predators are not attracted to the area.
  - The excavated top 6-inches of soils removed during drilling shall be stockpiled. After drilling, the stockpiled soils shall be replaced back on the top portion of the drill holes.
  - All tortoise-proof exclusionary fences shall be removed after site rehabilitation.
- c) **Mohave Ground Squirrel:** As noted, temporary exclusion fencing will be erected for desert tortoise. This fencing will be sized to exclude small-mammals in order to provide protection for the Mohave ground squirrel should any be present within the drill hole study areas. When considering types of tortoise-proof exclusion fencing to install, the Mohave ground squirrel's size will be taken into account (i.e., a smaller mesh size or fencing with a solid barrier). Once the drilling rigs and trucks are in place, temporary exclusion fencing will be erected at the ends of the work area, perpendicular to the road, to ensure that no Mohave ground squirrels enter the work area while drilling is being conducted.
- d) **Burrowing Owl:** From the [Burrowing Owl Survey Protocol and Mitigation Guidelines](#), prepared by the California Burrowing Owl Consortium:
- A pre-drilling survey will be conducted according to burrowing owl survey protocol no more than 7-days prior to ground disturbing activities.
  - No disturbance will occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding Season of September 1 through January 31.
  - No disturbance will occur within 75 m (approx. 250 ft.) during the breeding Season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls or a single unpaired resident bird.

## 5. Heritage Resources:

- a) All ground disturbing activities must be confined to the areas surveyed as part of the Cultural Resource inventory project listed above. If moved from the inventoried area, work shall cease until additional cultural resource inventory and review is completed.
- b) In the event that any cultural resources (historic or prehistoric) are encountered during ground disturbing activities, work shall cease, discoveries should be left intact, and the BLM Authorized Officer shall be notified immediately.
- c) In the event of discovery of human remains, pursuant to Federal law and regulations (Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7; Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10; and, Public Lands, Interior 43 CFR 8365.1-7), as well as California state law (California Health & Safety Code 7050.5, Dead Bodies and California Public Resources Code 5097.98,

Notification of Discovery of Native American Human Remains), all work in the area will cease immediately, nothing will be disturbed, and the area will be secured. The County Coroner's Office will be notified, as well as the BLM project archaeologist. Work may resume only with written authorization from the BLM Field Office Manager.

- d) The operator shall follow the cultural and paleontological performance standards of Federal Regulations 43 CFR 3809.420(b)(8), attached.

**6. Recreation:**

- a) Drilling operations shall not impede general public access and use of designated open routes.
- b) To the extent possible, operations on designated open routes shall be restricted from Monday noon until Friday noon. The operator shall avoid drilling-related operations on designated open routes during weekends and holidays.
- c) To minimize conflicts with recreational users drill sites located on designated routes should be worked on Tuesday, Wednesday, or Thursday. Working these sites on these weekdays would lessen the potential for conflict with users since these days see fewer visitations than on Friday, Saturday, Sunday and Mondays.
- d) Drilling activities should be planned during a three week time of year that does not have a federally recognized holiday to avoid conflicting with increased recreational use that happens over these time periods.
- e) On designated routes temporary signs such as "Detour", should be erected to direct traffic around the drill site to reduce the impact to recreationalist.
- f) On undesignated routes temporary signs such as "Do Not Enter", should be erected at the intersection with the designated route to discourage the public from traveling down these routes to inquire about the drilling activities.

**7. Range:**

- a) The sheep grazing season is generally April and May if the annual forage is good. Sheep may be in the project site vicinity for about a week during that two month span of time. Communication is the key to mitigation. BLM (Range) will inform the sheep operator of the drilling area and instruct him to avoid the site if drilling is occurring.
- b) Drilling operators should notify their BLM contact (Minerals) of their potential activity in the area during the months of April and May. The BLM can put the sheep operator in contact with the drilling personnel to avoid conflicts. Temporary fencing of the drilling sites should not be necessary as long as there is adequate communication. Drill holes should be capped when not in use. Furthermore, drilling operators should try not to block the roads or leave enough space so sheep operators can water just off the roads.

**8. The biological monitor for the project shall:**

- a. Precede heavy equipment entering/leaving the area.
- b. Ensure that vehicles enter/leave the area together and in singlefile.
- c. Ensure that no tortoises are within any tortoise enclosure fence.
- d. Contact BLM immediately if any injured/dead tortoise is encountered.
- e. Analyze a much larger cumulative impact area if a larger mine is pursued.
- f. Ensure avoidance & mapping of any Mohave fish-hook cactus encountered.
- g. Ensure any open hole is either under direct supervision (of the monitor) or appropriately fenced to exclude tortoise until the hole is backfilled.
- h. Provide a report available for public review.

**43 CFR 3809.420. What performance standards apply to my notice or plan of operations?**

The following performance standards apply to your notice or plan of operations:

(a) *General performance standards* —

(1) *Technology and practices.* You must use equipment, devices, and practices that will meet the performance standards of this subpart.

(2) *Sequence of operations.* You must avoid unnecessary impacts and facilitate reclamation by following a reasonable and customary mineral exploration, development, mining and reclamation sequence.

(3) *Land-use plans.* Consistent with the mining laws, your operations and post-mining land use must comply with the applicable BLM land-use plans and activity plans, and with coastal zone management plans under 16 U.S.C. 1451, as appropriate.

(4) *Mitigation.* You must take mitigation measures specified by BLM to protect public lands.

(5) *Concurrent reclamation.* You must initiate and complete reclamation at the earliest economically and technically feasible time on those portions of the disturbed area that you will not disturb further.

(6) *Compliance with other laws.* You must conduct all operations in a manner that complies with all pertinent Federal and state laws.

(b) *Specific standards* —

(1) *Access routes.* Access routes shall be planned for only the minimum width needed for operations and shall follow natural contours, where practicable to minimize cut and fill. When the construction of access routes involves slopes that require cuts on the inside edge in excess of 3 feet, the operator may be required to consult with the authorized officer concerning the most appropriate location of the access route prior to commencing operations. An operator is entitled to access to his operations consistent with provisions of the mining laws. Where a notice or a plan of operations is required, it shall specify the location of access routes for operations and other conditions necessary to prevent unnecessary or undue degradation. The authorized officer may require the operator to use existing roads to minimize the number of access routes, and, if practicable, to construct access roads within a designated transportation or utility corridor. When commercial hauling is involved and the use of an existing road is required, the authorized officer may require the operator to make appropriate arrangements for use and maintenance.

(2) *Mining wastes.* All tailings, dumps, deleterious materials or substances, and other waste produced by the operations shall be disposed of so as to prevent unnecessary or undue degradation and in accordance with applicable Federal and state Laws.

(3) *Reclamation.*

(i) At the earliest feasible time, the operator shall reclaim the area disturbed, except to the extent necessary to preserve evidence of mineralization, by taking reasonable measures to prevent or control on-site and off-site damage of the Federal lands.

(ii) Reclamation shall include, but shall not be limited to:

(A) Saving of topsoil for final application after reshaping of disturbed areas have been completed;

(B) Measures to control erosion, landslides, and water runoff;

(C) Measures to isolate, remove, or control toxic materials;

(D) Reshaping the area disturbed, application of the topsoil, and revegetation of disturbed areas, where reasonably practicable; and

(E) Rehabilitation of fisheries and wildlife habitat.

(iii) When reclamation of the disturbed area has been completed, except to the extent necessary to preserve evidence of mineralization, the authorized officer shall be notified so that an inspection of the area can be made.

(4) *Air quality.* All operators shall comply with applicable Federal and state air quality standards, including the Clean Air Act (42 U.S.C. 1857 *et seq.* ).

(5) *Water quality.* All operators shall comply with applicable Federal and state water quality standards, including the Federal Water Pollution Control Act, as amended (30 U.S.C. 1151 *et seq.* ).

(6) *Solid wastes.* All operators shall comply with applicable Federal and state standards for the disposal and treatment of solid wastes, including regulations issued pursuant to the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.* ). All garbage, refuse or waste shall either be removed from the affected lands or disposed of or treated to minimize, so far as is practicable, its impact on the lands.

(7) *Fisheries, wildlife and plant habitat.* The operator shall take such action as may be needed to prevent adverse impacts to threatened or endangered species, and their habitat which may be affected by operations.

(8) *Cultural and paleontological resources.*

(i) Operators shall not knowingly disturb, alter, injure, or destroy any scientifically important paleontological remains or any historical or archaeological site, structure, building or object on Federal lands.

(ii) Operators shall immediately bring to the attention of the authorized officer any cultural and/or paleontological resources that might be altered or destroyed on Federal lands by his/her operations, and shall leave such discovery intact until told to proceed by the authorized officer. The authorized officer shall evaluate the discoveries brought to his/her attention, take action to protect or remove the resource, and allow operations to proceed within 10 working days after notification to the authorized officer of such discovery.

(iii) The Federal Government shall have the responsibility and bear the cost of investigations and salvage of cultural and paleontology values discovered after a plan of operations has been approved, or where a plan is not involved.

(9) *Protection of survey monuments.* To the extent practicable, all operators shall protect all survey monuments, witness corners, reference monuments, bearing trees and line trees against unnecessary or undue destruction, obliteration or damage. If, in the course of operations, any monuments, corners, or accessories are destroyed, obliterated, or damaged by such operations, the operator shall immediately report the matter to the authorized officer. The authorized officer shall prescribe, in writing, the requirements for the restoration or reestablishment of monuments, corners, bearing and line trees.

(10) *Fire.* The operator shall comply with all applicable Federal and state fire laws and regulations, and shall take all reasonable measures to prevent and suppress fires in the area of operations.

(11) *Acid-forming, toxic, or other deleterious materials.* You must incorporate identification, handling, and placement of potentially acid-forming, toxic or other deleterious materials into your operations, facility design, reclamation, and environmental monitoring programs to minimize the formation and impacts of acidic, alkaline, metal-bearing, or other deleterious leachate, including the following:

(i) You must handle, place, or treat potentially acid-forming, toxic, or other deleterious materials in a manner that minimizes the likelihood of acid formation and toxic and other deleterious leachate generation (source control);

(ii) If you cannot prevent the formation of acid, toxic, or other deleterious drainage, you must minimize uncontrolled migration of leachate; and

(iii) You must capture and treat acid drainage, or other undesirable effluent, to the applicable standard if source controls and migration controls do not prove effective. You are responsible for any costs associated with water treatment or facility maintenance after project closure. Long-term, or post-mining, effluent capture and treatment are not acceptable substitutes for source and migration control, and you may rely on them only after all reasonable source and migration control methods have been employed.

(12) *Leaching operations and impoundments.*

(i) You must design, construct, and operate all leach pads, tailings impoundments, ponds, and solution-holding facilities according to standard engineering practices to achieve and maintain stability and facilitate reclamation.

(ii) You must construct a low-permeability liner or containment system that will minimize the release of leaching solutions to the environment. You must monitor to detect potential releases of contaminants from heaps, process ponds, tailings impoundments, and other structures and remediate environmental impacts if leakage occurs.

(iii) You must design, construct, and operate cyanide or other leaching facilities and impoundments to contain precipitation from the local 100-year, 24-hour storm event in addition to the maximum process solution inventory. Your design must also include allowances for snowmelt events and draindown from heaps during power outages in the design.

(iv) You must construct a secondary containment system around vats, tanks, or recovery circuits adequate to prevent the release of toxic solutions to the environment in the event of primary containment failure.

(v) You must exclude access by the public, wildlife, or livestock to solution containment and transfer structures that contain lethal levels of cyanide or other solutions.

(vi) During closure and at final reclamation, you must detoxify leaching solutions and heaps and manage tailings or other process waste to minimize impacts to the environment from contact with toxic materials or leachate. Acceptable practices to detoxify solutions and materials include natural degradation, rinsing, chemical treatment, or equally successful alternative methods. Upon completion of reclamation, all materials and discharges must meet applicable standards.

(vii) In cases of temporary or seasonal closure, you must provide adequate maintenance, monitoring, security, and financial guarantee, and BLM may require you to detoxify process solutions.

(13) *Maintenance and public safety.* During all operations, the operator shall maintain his or her structures, equipment, and other facilities in a safe and orderly manner. Hazardous sites or conditions resulting from operations shall be marked by signs, fenced, or otherwise identified to alert the public in accordance with applicable Federal and state laws and regulations.

## APPENDIX B

Public Comments on  
Dragonfly Environmental Assessment  
DOI-BLM-CA-D050-2014-014-EA