APPENDIX I   Response to Comments

The public comment period for The Doe Run Company Prospecting Permit Project Environmental Assessment (EA) began Tuesday, October 23, 2001, and ended Wednesday, November 21, 2001. Notice of the comment period was published on Monday, October 22, 2001, in The Rolla Daily News, Rolla, Missouri. In addition, a copy of the EA, with a cover letter, was mailed on October 18, 2001, to those who had mailed comments during the scoping period, or who had requested a copy of the EA. The EA was posted to our website and an email with a link to the document was sent to those people who commented electronically. A letter stating that the EA was available for comment was also sent to those people on the scoping list who did not comment during scoping. Mailing lists are available in the project file.

Comments are grouped into several broad categories, so that all comments dealing with a particular issue are together. In addition, the comments that are the same or very similar are summarized with excerpts from representative letters, and one response is provided.

Commenters
We received comments from 58 individuals during the comment period. Numbers were assigned to each commenter as the comments were received and are used below to identify the author of each comment.

1. David G. C. Robertson
2. Dan Buxton
3. Dale Brooks
4. William F. Jud
5. Dick Bullock
6. Daniel Talonn
7. R. Joe Wagner, The Doe Run Company
8. Carol Davis
9. Jim Bensman, Heartwood
10. C. Horlacher
11. John C. Morrisey IV
12. Jay Coombs
13. Cole McFarland
14. Bea Covington and Edward Heisel, Missouri Coalition for the Environment
15. Richards Heine
16. Scott Schneider
17. Sarah Morrisey
18. Donald R. East, Knight Piesold and Co.
19. Angela H. Thomas
20. Kim Cox, Seafab Metals Company
21. James H. Haguewood
22. Denis Murphy
23. James R. Pettus
24. Bruce Ahler
25. James H. Husman  
26. David Bishop  
27. Richard Smith  
28. Mari A. Husman  
29. Robert Foshee  
30. Randall Edgar  
31. Henry B. Robertson  
32. Steve Thomas, Midwest Trail Riders Association Inc.  
33. Robert G. Dunn Jr  
34. Deborah Olkkonen  
35. Mary LaRue  
36. Caroline Pufalt  
37. Michael F. Bollinger  
38. Randall Parks  
39. Donald R. Taylor  
40. Ed Williams  
41. Jim Ziebol, North American Butterfly Association  
42. Joseph McCord  
43. Terry W. Harris  
44. Stephanie Nelson  
45. P.J. Roberts  
46. Steven A. Osterberg  
47. David O. Finkenbinder  
48. Mark Bohnert  
49. Caroline Pufalt  
50. Leslie Lihou  
51. Mark Sandretto  
52. Laura Skaer  
53. Steve Borell  
54. Norma Lee Stroupe  
55. Yvonne Homeyer, Webster Groves Nature Study Society  
56. Wayne T. Walker  
57. Stephen Mahfood, Missouri Department of Natural Resources  
58. Jeremiah W. Nixon, Attorney General of Missouri  

Comments

1. **Support of mineral exploration.** Many commenters urged us to consider the importance of minerals exploration to meet the needs of the American people. (Commenters 1, 2, 4, 5, 11, 12, 16, 17, 18, 19, 23, 33, 39, 45, 46, 47, 52, 53)

   “The Doe Run Company has provided good, high-paying jobs and tax base to the communities around the Viburnum Trend and the state of Missouri for many years. In order to continue this contribution it is imperative that Doe Run be allowed to conduct its exploration activities on the Mark Twain National Forest. As always, one of our top priorities is to protect the environment in which we live, while conducting our business in a professional manner.”

2
“Please consider the importance for our Country to maintain the ability to provide at least some degree of our mineral needs.”

“It is critical that we support exploration programs and a strong minerals industry to provide for our future mineral needs.”

“Mineral exploration and development has historically been an extremely important part of the history and economy of SE Missouri and it should continue to be.”

“I am a resident of Dent County and I support mineral exploration and surface drilling in the Mark Twain Forest.”

“The metallic minerals which may be discovered and produced as a result of this exploration drilling project are essential to our civilized way of life. We would be hard-pressed to do without lead, zinc, copper, cobalt and other metals which may presently lie useless under a thousand feet of rock. Due in large part to political corruption of the thankfully past Clinton Administration, America now imports from China nearly all of the newly mined lead that we use. It is never a good idea to depend on imports for essential materials. We would not have to fight wars in places like Iraq and Kuwait if we did not depend on those nations for our oil. Let’s not find ourselves fighting the Chinese over lead and zinc.”

“I have been a teacher at the Viburnum schools for over 20 years. At least ½ the children are eligible for free lunches. Without timbering and mining in the area, many of the children would have little or nothing. The mines must find more ore to keep people employed.”

Response: Your comments have been noted.

2. Oppose mineral exploration. Several commenters don’t believe mineral exploration should be allowed on National Forest System lands. (Commenters 8, 14, 36, 48)

“Allowing Doe Run to prospect for lead in the Mark Twain will only further to continue to pollute the Ozarks.”

“I oppose all prospecting and expansion of lead mining in the Ozarks.”

“Mining and this exploratory drilling is inappropriate in the project area due to the karst topography, water quality and wildlife risks.”

Response: Your comments are noted. Effects are documented in EA, beginning on page 19. The interdisciplinary team (ID team) considered effects on forest resources associated with prospecting, including karst topography, water quality, and wildlife (EA, pages 19-27, and 38-49).

3. Support of Alternative A. Several commenters supported Alternative A, which would not issue the prospecting permits. (Commenters 9, 31, 37, 41, 50, 51, 55)

“I believe that Alternate A (NO PERMITS) is the best course of action.”

“We believe that public lands should be held intact in large blocks to protect migratory birds, neotropical migrant songbirds and endangered species requiring such habitat.”

“As for Doe Run’s fine record of stewardship (p 35), the soil of Herculaneum is coated with lead, and elsewhere tailing piles cast lead to the wind. Contrary to the EA, Doe Run’s history argues strongly for No Action.”

Response: Your comments have been noted. The interdisciplinary team (ID team) considered
effects on forest resources associated with prospecting, including Neotropical migrant songbirds, threatened and endangered species (EA, pages 38-49).


“Please consider and approve Alternative B.”

“I encourage you to issue the seven (7) prospecting permits using Alternative B as the guideline. This alternative will best serve the public landowners and will not unduly burden Doe Run with additional, unjustifiable costs in order to accomplish our exploration objectives.”

“NMA urges the Forest Service and BLM to adopt Alternative B as the preferred alternative in light of the costs other than environmental considerations that will result from the imposition of the mitigation measures included in Alternative C.”

Response: Your comments are noted. The mitigation measures in Alternative C were created for resource protection.

5. Additional Restrictions in Alternative C not needed. Many commenters voiced concern about the special stipulations proposed for Alternative C. (Commenters 7, 10, 11, 12, 15, 16, 18, 19, 20, 21, 22, 24, 25-30, 32, 33, 34, 35, 38, 39, 42, 43, 46, 47, 52, 53, 56)

“The EA analyzes the impacts of Alternative B and C through-out the document and indicates that both alternatives mitigate the exploration impacts. The Analysis does not indicate why the additional requirements in Alternative C are needed.”

“What is the justification for why mineral exploration is being singled out for added requirements including the requirement to modify the Forest Plan standards and guidelines? Other uses that have long term impacts are not being restricted in the same way. Requiring modifications to the Forest Plan standards and guidelines is not consistent with the EA supporting documentation.”

“Mineral exploration is a short-term impact with less surface disturbance than many other Forest activities. The surface impact of timber harvest, permanent road construction, recreation construction, timber stand improvement, and facility construction are all more significant and lasting that (sic) mineral exploration, and yet mineral exploration is the activity that supposedly requires modification of the Forest Plan standards and guidelines. These modifications are not consistent with the identified impacts and not consistent with the requirements for other similar activities on the forest.”

“Over 10,000 holes have been drilled in the Viburnum Trend, many of them on USFS land, and the cumulative effects sections of the EA indicates that the impacts are fully mitigated with Alternative B and offers no explanation why additional mitigation is needed.”

“As shown in the EA, the impacts of development are fully mitigated through this alternative. The EA does not support or justify the need for any additional mitigation beyond that specified in Alternative B. The sections on Soil Productivity and Wildlife both specify that the mitigation proposed in Alternatives B and C are similar and would be effective. In no instance does the EA state that additional mitigation requirements are necessary. To require further mitigation would therefore be arbitrary and capricious.”

“In short, it appears that the additional stipulations and modifications would not provide significantly greater environmental protection to potentially affected surface water.”
“The agencies should weigh the cost to the applicant of relying on imprecise data and weigh the benefits of the additional stipulations and modifications created by Alternative C. This cost comparison also should take into account the various mitigation requirements the applicant would have to meet under Missouri law and stipulations already imposed by the Mark Twain Forest Plan under Alternative B. The agencies should also consider the additional costs associated with the specific stipulations contained in Alternative C, including the costs associated with the construction and maintenance of on-site effluent pits. The EA should account for these costs in light of the finding that under Alternatives B and C the amount of effluent reaching the surface water would be small.”

**Response:** The special stipulations developed for Alternative C were designed to be included in the prospecting permit to reduce the potential of impacts to resources managed by the Mark Twain National Forest. The environmental impacts of all the alternatives are displayed in the EA, beginning on page 17. Each resource discussion includes an analysis of impacts for Alternative B (without the additional special stipulations) and Alternative C (with additional special stipulations). For example, the EA states that the additional mitigation measures in Alternative C would “reduce the potential for soil erosion and displacement to a much greater extent than under Alternative B” (EA, page 32 and 33).

The Doe Run Company would make the determination if the prospecting information would be worth the expense of the mitigation measures. If not, they have the option not to drill.

6. **Additional restrictions do not provide enough environmental protection.** (Commenter 36, 37, 49)

“The proposed action does not provide enough protection for the environment. It is defective in its protection of water quality during the drilling and exploration process. The drilling area overlaps with habitat of the endangered Indiana Bat, in particular the Cave Hollow Hibernacula and other areas.”

**Response:** The mitigation measures and special stipulations in Alternative C were designed to minimize potential for impacts. Mitigations to protect water quality include S1, S2, S3, S4, S5, S5, S7, S8, S9, S10, S11, W1, W2, and W3 (EA pages 12-15). The effects of the proposal and alternatives on water quality were determined to be negligible (EA, page 25). Special Stipulation #5 requires all surface drilling operations to comply with the US Fish and Wildlife Service’s June 23, 1999 Biological Opinion, which includes protection for Indiana bat.

Cave Hollow Cave is included in the Area of Influence (AOI) EA and Decision Notice (November 16, 2001). Permit application MOES 049256 is the only permit to overlap the Cave Hollow Cave Area of Influence. That overlap is seven acres (the portion south of Highway 32 in Section 6, Township 34 North, Range 1 West.) Drilling is permitted within this portion of the Area of Influence (AOI EA, page 17). The Biological Evaluation (BE) analyzed potential effects to the Indiana bat (EA, Appendix D). The US Fish and Wildlife Service reviewed the BE and determined that project would not likely jeopardize the Indiana bat.

7. **Support of Alternative C.** Several commenters expressed support for choosing Alternative C. (Commenters 1, 2, 4, 6, 31, 44, 50, 57)

“Alternative C, which moves 2 holes to more environmental friendly locations, seems to be a reasonable approach to permitting the drilling.”

“Concern for erosion points to a clear preference for Alternative C over B, even in the EA’s own terms (pp. 32-3).”
“Alternative ‘C’ is acceptable, although excessively fussy and restrictive and representative of misplaced national priorities regarding development of natural resources vs. environmentalist-driven extremism. Regardless, Alternative ‘C’ is a workable compromise and you are to be commended for adhering to the principle of Multiple Use in the onslaught of extremist pressure to close all forests to all use by people.”

Response: Your comments are noted. Table 2-1 (EA, page 16) compares the alternative effects by significant issue. It displays that Alternative C has more protective measures than Alternative B.

8. Relationship between prospecting and mining. Some commenters believe prospecting would automatically lead to mining, while others believe that the two are separate activities. (Commenters 5, 14, 31, 36, 37, 49, 55, 57, 58)

“You are also correct in the facts that exploration drilling does not necessarily lead to developing a mine. I’m sure that any mining company could supply factual data proving this point based on limited success of past exploration drilling.”

“Drilling should not be considered in the absence of the anticipated impacts of mining. Despite the EA’s comments to the contrary, there is a connection between the two events. That connection is significant enough that it should be considered in any responsible evaluation of the drilling permit. Historically and legally there is a high likelihood that permit to mine would follow the discovery of recoverable ore.”

Response: Bureau of Land Management (BLM) records show that in the past 23 years there have been 145 prospecting permits issued on the Mark Twain National Forest. In that same time frame, there have only been 3 mining leases issued. Ninety-eight percent of the prospecting permits have resulted in no mining leases; therefore it is reasonable to assume that mining will not automatically follow prospecting. Also, see the Response to Comments #35-38.

9. Environmental effects of past prospecting. Some commenters stated that prospecting has not had an impact on the environment, while others believe it has. (Commenters 5, 14, 31, 36, 37, 40, 48, 49, 55, 58)

“…Your Assessment Statement is correct in that the drilling for minerals in the past by Doe Run or their predecessor company, St. Joe Minerals Company, has in no way been harmful to the environment of the Mark Twain area. Furthermore, the exploration drilling of the area in the past has in no way been harmful to the quality or quantity of water within the region.”

“…(T)he Doe Run Company is one of the largest polluters in Missouri. It is virtually never been in full compliance with the state’s clean air regulations. The people and lands of Missouri should suffer no additional harm from this rogue company.”

Response: The effects of past prospecting are documented in the effects section of the EA on forest resources, such as water quality. Permittees are required to follow all state laws. There were no adverse effects from past prospecting (see EA pages 25-27, 54, 63, 66, and 68-71). See the Response to Comment 22b and 22e for additional information.

10. The Doe Run Company’s track record. Some commenters felt the permits should not be issued until The Doe Run Company resolved federal and state complaints against them (Commenter 6, 31, 37, 50)

“The one reservation I have concerns the record of Doe Run Co.’s lack of fulfilling its obligations towards the environment and its total disregard to the population’s health. This has recently been
made extremely clear by the case of Herculaneum. It seems to me that a delay in approving their application for work in the Forest is not only justified, but necessary. I urge you to consider approving Alternative C conditional on the applicant’s satisfactorily resolving the Federal and State’s (eg. EPA, DNR, etc.) complaints against them. After all, there is no point in imposing conditions on the project if the applicant won’t satisfy them.”

Response: The Doe Run Company has been extremely cooperative with all requirements imposed by the BLM or Forest Service during their exploration activities over the past 20+ years. From drill-site selection to drill-site reclamation, all resource conflicts have been satisfactorily resolved.

11. Relocation of drill sites in Alternative C. Some commenters were concerned about moving drill sites. (Commenter 7, 10, 12, 39)

“…I suggest you re-open discussions with the Company to remedy any lingering concerns that you have about certain ‘steep’ drill sites and sedimentation from the drilling effluent. I’m sure a common sense solution can be reached to allow drilling at the locations contemplated under Alternative B while minimizing sedimentation in nearby intermittent streams.”

“The special stipulations in Alternative C could cause the relocation of drill holes from their planned location based on sound geologic principal. The widths of the mineralization in the Viburnum Trend range from 50 feet up to 360 feet. Moving drill holes from the planned locations may cause the drilling to miss the intended target (s). The effect of this could be that additional holes will need to be drilled in order to evaluate the original target. This equates to higher drilling costs and additional drill sites for rehabilitation.”

“Doe Run, which has always worked with the Forest Service to resolve hole location issues in the past, has not given the opportunity to work with the Forest Service to relocate the two exploration holes identified in Alternative C.”

“We will work with the Forest about the need to relocate the two holes identified in the EA, but would have liked to resolved (sic) that issue during the field review and prior to issuance of the document.”

“In alternative C, drill locations were moved without discussion with Doe Run personnel. This is contradictory to procedures used in the past that have proven very functional for both the USFS and Doe Run. As referenced above, we must drill where ore bodies are located not where the most favorable drill locations exist.”

Response: The commenters are correct that The Doe Run Company has always worked with the Forest Service to resolve hole location issues. When the ID team visited each drill site with John Ritter from The Doe Run Company, Mr. Ritter was amiable to moving the two drill sites as proposed in Alternative C. We discussed changing the locations for the two sites in Alternative B, but decided that creating another Alternative C, with the new locations, would help us better document the difference effect for each location.

The special stipulations in Alternative C were developed to protect natural resources managed by the Forest Service. The Doe Run Company would make the determination if the prospecting information would be worth the expense of the mitigation measures. If not, they have the option not to drill.

12. Staked locations vs. permit locations: “From the EA, it does not appear that Doe Run was asked why locations given in the permit applications did not match the locations staked. The staked
locations were then evaluated in the assessment. What happens if Doe Run decides to use the locations in the permit applications as opposed to the staked locations that were evaluated?” (Commenter 44)

Response: The drill site locations staked on the ground and analyzed in the EA will be the permitted location. If The Doe Run Company were to decide they wanted a different location after the permit is issued, the Forest Service would begin the process to approve the new location. The note in the EA (pg 12) is not very clear. The staked locations did not vary greatly from the original submitted mapped locations, typically less than 50 feet. When the ID team visited the drill site locations with John Ritter from The Doe Run Company, Mr. Ritter explained that the maps were created in the office from available information. When the locations were staked on the ground, the location may have been adjusted slightly to accommodate the actual terrain and conditions.

13. Alternative C not included in scoping. Some commenters believe we should have included all alternatives in the scoping package. (Commenter 12, 18, 19, 24, 43) “It seems the Forest Service has issued an Environmental Assessment that identifies exploration with special stipulations as the preferred alternative (Alternative C) which was not one of the alternatives identified in scoping. If you are going to petition the publics input via a scoping process, then you should include all the alternatives at the outset.”

Response: Scoping is initiated early in the planning process to determine the scope of issues to be addressed and for identifying the significant issues related to a proposed action. (40 Code of Federal Regulations (CFR) 1501.7) The issues identified from scoping are used to formulate alternatives. We could not include alternatives in the scoping process because the alternatives were developed from the results of that process.

14. Extension of comment period. “We request an extension of the comment period to permit more time for interested citizens to evaluate and respond to this EA.” (Commenter 36, 49)

Response: There does not appear to be a compelling reason why the comment period should be extended. Interested and affected people, including adjacent landowners and others, were invited to participate during scoping and again during the comment period. We received over 340 responses. Failure to submit timely comments is not a reason to extend comment periods (40 CFR 1506.10(d)).

15. Purpose and Need

a. Need for drilling: “The EA contains an inadequate evaluation of the purpose and need for the proposed exploratory drilling. The action to be evaluated is not the Forest Service's consideration of the permit application, but rather the underlying drilling, road building and other actions associated with Doe Run's proposal. The EA contains no showing that these actions are needed. For example, there is no evidence that Doe Run's other mines are running out of lead, that there is a general lead shortage or that alternatives to lead cannot be used in general manufacturing processes.” (Commenter 14)

“(D)rilling will continue on private lands (EA72) which comprise the vast majority of land in the area. This offers no justification for disturbing National Forest.” (Commenter 31)

“The Forest Service is obligated under NEPA to evaluate the purpose and need for Doe Run’s request for the proposed exploratory drilling. Significantly, no information has been submitted by Doe Run to demonstrate that it needs to conduct the proposed exploratory drilling. The EA fails to address Doe Run’s lack of substantiation as to the
need for the proposed drilling. The Forest Service cannot assume need. Rather, it is Doe Run’s burden to demonstrate need. Doe Run has failed to do so.” (Commenter 55)

Response: The Purpose and Need for Action is detailed on pages 2 and 3 of the EA. Forest Service is responding to seven applications for prospecting permits, as required by federal laws and policies also detailed on pages 2 and 3. Our responsibility is limited to determining the environmental effects and submitting stipulations to protect the resources. See Response to Comment 15b.

b. Area previously explored: “Equally important is that some of the areas covered by the application have already been explored years ago. The Coalition has been in contact with a resident of the area near the existing West Fork mine who personally knows of exploratory drilling in the same area covered by Doe Run’s application. This indicates that the Forest Service has not established the need for information that might be produced by the proposed exploratory drilling. The Forest Service must address the status of existing information and why this information is not adequate before it allows the environmental impacts associated with the current proposal.” (Commenter 3, 14, 55)

Response: Missouri’s lead-zinc-copper deposits are erratic, occurring as a series of disconnected deposits of irregular dimension and uneven grade. Often, a considerable amount of exploration is necessary to find individual ore pods. In the late 1950’s, the area that now hosts the Viburnum Trend was heavily drilled and the current mines and their respective ore bodies delineated. For example, the St. Joseph Mineral Corporation, the precursor to the present-day Doe Run Company, held prospecting permits encompassing land lying between what would become the Magmont and Brushy Creek Mines, near the project area. St. Joseph Mineral Corporation drilled the property and judged it to be unfavorable for commercial lead-zinc deposits and relinquished the land to its competitor, AMAX Lead Company of Missouri. AMAX reconvened drilling and soon discovered the richest and most extensive lead-zinc ore body along the Viburnum Trend – The Buick Mine. St. Joseph Mineral Corporation had simply drilled around the deposit.

16. Alternatives.

a. Range of Alternatives: “There was an insufficient range of alternatives in the EA. Two of the three alternatives were essentially identical, involving the same number of drill sites with only a few more conditions imposed in Alternative C. NEPA requires that federal agencies investigate a full range of alternatives to ensure that environmental impacts are avoided wherever possible. The Forest Service should have included an alternative that allowed for fewer drill sites and less forest clearing than the proposal by Doe Run.” (Commenter 14, 55)

Response: The ID team discussed limiting the number of drill sites (project file, Folder D-4, page 2). We determined that we could best address the issues from scoping by creating mitigation measures and stipulations to protect surface resources to minimize environmental impacts. As the Responsible Official, I made the final decision on issues and alternatives analyzed in detail.

Alternative C differs from Alternative B in the following ways (EA, page 11):

- it does not allow drill sites to be placed on slopes greater than 35%,
- it requires drilling effluent be confined to on-site pits,
- it prohibits drilling to occur within filter strips,
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- it moves two proposed drill sites to minimize potential impacts, and
- it incorporates special stipulations (listed in Appendix C, beginning on page C-2) that impose 23 additional site-specific requirements to protect the environment.

There is a range of effects from the alternatives (EA, effects section). Council of Environmental Quality (CEQ) requires a reasonable range of alternatives to sharply define the issues and provide a clear choice for the decision maker. Alternative C was developed to respond to the significant issues (EA, page 11).

b. Alternative that limits drill holes to initial 19. “...I believe a prudent alternative would be to define the permit scope to limit the number of borings to 19. This would require Doe Run to submit a subsequent application for additional borings, if and when, they determine more are worth installing. The burden of such a decision would presumably be very small, based on the clear expectations documented in the EA. This would allow the public an opportunity to review potential impacts of a largest scale project, once its scope is better defined and mutually accepted. Additional benefits result from such a decision. It appears as if only the initial 19 sites have been inspected and approved by the District Ranger. The full impacts of activities at the remaining 213 are highly speculative, since they have yet to be reviewed. Why force a decision regarding impacts on such a speculative scope? Besides, it is unclear what real authority the District Ranger would have, in so far as requesting or enforcing site specific considerations, once the blanket authorization is granted for the remaining borings, per Alternative B or C. Limiting the number of borings via specific permit criteria would appear to be far more prudent approach, without any significant likely burden to the permittee.” (Commenter 37)

Response: The Doe Run Company would be required to follow the steps outlined in the Response to Comment 17 to obtain approval for any subsequent drill sites. The purpose of obtaining a prospecting permit is to establish the existence of a valuable mineral deposit. A number of drill sites may be necessary to determine the existence of a valuable deposit. Limiting the number of drill sites authorized for the permit could limit the permittee ability to achieve the purpose of the permit. Therefore, it is more prudent to limit the potential resource damage from drill sites via permit stipulations than to limit the number of drill sites.

c. Alternative that includes Seasonal Restrictions: “Another alternative would seem to be a very cost-effective means of reconciling the multiple use mandate, for those sites utilized by the public for recreation – particularly properties along the Ozark Trail and its scenic vistas. Another mitigation measure (an expansion of R1) could be specified for these sites, requiring scheduling of actual field work to avoid disturbance during peak recreational usage, perhaps limiting activities in these areas to the winter months of January or February and possibly including late summer, August. By defining these months, numerous benefits result. Due to the temperature extremes, recreational usage would be expected to be lower than the spring and fall peaks. (Trailhead postings notifying the public in advance of the drilling schedule would help as well.) This timing also avoids periods of heavy precipitation and targets periods of dry or frozen ground, consistent with S5 and S9. In addition, site restoration dependant upon re-vegetation would be enhanced, as earth moving work, seeding, etc., would (immediately) precede milder weather and wetter growing seasons. Again, in light of the limited number of expected (actual) boring sites, the financial and operational burden associated with these
measure should be quite minor.” (Commenter 37)

Response: The EA determined that seasonal restrictions were not necessary to mitigate potential effects to recreation because of the short duration and nature of the proposed drilling operations (EA, page 52).

17. Enforcement of mitigation measures: “What type of enforcement, and by whom, will occur in order to assure the Doe Run Company follows measures intended to protect habitat and species?” (Commenter 44)

Response: The permits would include stipulations specifically developed for the protection of surface resources. The drilling process involves oversight by both the Forest Service and BLM. BLM requests input on surface protection from the Forest Service before any drilling on federal prospecting permits is approved. A Forest Service representative(s) visits every proposed drill site and uses the permit stipulations to determine what specific steps are needed to protect surface resources on specific drill locations. These stipulations are discussed with the permittee and documented in a letter from the Forest Service to BLM. BLM includes these measures when they amend the operating plan to allow for the proposed holes to be drilled. Forest Service and/or BLM may do unscheduled on-site inspection during drilling operations. After drilling is completed, the FS representative(s) checks the drill locations to make sure that site specific stipulations were followed. If they have not been followed, the Forest Service requires the permittee to fix any problems involving surface protection. Non-compliance with permit stipulations has not been a problem with permits and leases issued to The Doe Run Company.

The Salem and Potosi/Fredericktown Ranger Districts monitor project implementation with teams of interdisciplinary specialists throughout the year. This monitoring is to ensure management activities are in compliance with the Forest Plan and site-specific National Environmental Policy Act (NEPA) documents. Drilling is one management activity that is monitored. This monitoring has indicated that exploration and developmental drilling has been in accordance with permit/lease stipulations and mitigation measures in the project specific NEPA documents.

18. Revenue from Clearing: “Who receives the revenue generated by the sale of trees from land cleared for drill sites and temporary roads? The Doe Run Company should not benefit off public property sale (the trees of the Forest). Perhaps the revenue could be used to take steps to encourage revegetation of cleared areas.” (Commenter 44)

Response: There is no revenue collected from clearing of drill sites and temporary roads since the trees are damaged during the preparation of drill sites and temporary access roads. The downed trees are left in place as habitat for wildlife species such as salamanders, chipmunks, and rabbits. Special permit stipulation C3 would require that steps be taken by the permittee to re-vegetate drill sites and temporary roads.

19. Vegetation

a. Removal of trees: “What effect will the removal of trees to accommodate the drilling (sic)?” (Commenter 8)

Response: The environmental effects specific to vegetation are detailed in the EA, beginning on page 53. No adverse effects were identified. The effects of implementing the proposal on other forest resources (including cultural resources, water quality, soil productivity, visual resources, wildlife, recreation, and biodiversity) are described in the EA, beginning on page 17.
b. **Non-native species:** “Are any measures to be taken to impede the entrance of non-native species, such as seed in the tires of mechanical equipment or in the treads of footwear?” (Commenter 44)

*Response:* The EA contains an analysis of native and non-native species on page 64. Non-native fescue grass had been seeded on past drill sites, but this practice has stopped and seeding is now limited to annual cover crops and fertilizer to encourage native plants to recolonize sites. There are no actions proposed that would intentionally introduce non-native species. Introduction of non-native seeds in tire or footwear treads has not been identified as a problem on the Mark Twain National Forest.

c. **Revegetation:** “How long will revegetation take? How will this effect the forest ecosystem? Will roads revegetate if hunters continue to use them?” (Commenter 44)

*Response:* Depending on weather conditions, revegetation could begin with annual plants as soon as germination occurs (7-14 days). Revegetation of the drill sites and temporary roads is discussed in the EA on page 63. Mitigation measure S7 (EA, page 14) describes temporary road closure procedures. If unauthorized road use occurs, we will notify law enforcement personnel and adapt our road closure procedures accordingly.

20. **Effects to Recreation**

a. **Safety:** “Should there be a safety concern about recreational users seeing the drill sites and equipment, and then exploring them?” (Commenter 44)

*Response:* The drilling equipment would only be in place for a short duration (approximately 2 weeks), minimizing exposure to potential inquisitive recreationists. See discussion of effects to recreation on pages 51 and 52 of the EA. Permittees must take all responsible precautions to prevent injury to life or property (Forest Service Manual (FSM) 2822.32b).

b. **Wilderness Experience:** “Will the view of and noise from the drill sights negatively affect the wilderness experience of recreational forest users?” (Commenter 44)

*Response:* The nearest wilderness, Bell Mountain, is over ten miles away from any proposed drill sites. Users would not be able to see or hear prospecting activities from Bell Mountain Wilderness. Impacts to recreation users would be minimal (EA, pages 51-52).

c. **Ozark Trail:** “I consider protection against direct impacts on the Ozark Trail to be of paramount importance. The fact that the Ozark Trail is not yet included in the National Trails System does not mean that it is not worthy of the same level of protection from surface disturbing exploration.” (Commenter 37)

*Response:* Less than ½ mile of the Ozark Trail exists within the project area (EA, page 51). It bisects the 80-acre tract proposed for Prospecting Permit #049344. The total number of holes proposed for 049344 is twelve (EA, page 4). At ½ acre of clearing per drill site and access road, the proposal would impact, at most, six acres. Within this same 80-acre tract, one of the proposed initial drill sites is located within a previously harvested stand. Forest Plan standards do not allow drill sites to be on the trail. Additional mitigation measures to minimize impacts to trail users include reducing vegetative debris to 18 inches within the foreground of the trail and posting notices at nearby trailheads when drilling operations are underway (EA, pages 36 & 52).

i. **Impacts and Options:** “I strongly object to three positions taken on page 52. First, you state that since exploration activity ‘would take place over a short period
of time, there is no need to restrict the season of operation to minimize impacts to trail users.’ Based on vague estimates provided in Appendix A, complete operations…at each site may take from one to three weeks. Impacts and options to mitigate them are thus highly dependent upon the number of sites and their proximity to prime recreational areas. For a large number of sites the duration of such activities would make them clearly significant; for a small number, the effort and cost of restricting operation to avoid conflicting uses would be quite low.” (Commenter 37)

Response: The total proposed number of drill sites in the prospecting permit application associated with the Ozark Trail is three initial, with a total of twelve (See Response above). The EA determined the impacts to recreation to be minimal (EA, page 52). See response to Comment 16c.

ii. Notice at trailheads: “Second, the value of posting a notice of activities at the nearest trailheads is heavily overstated. Many of the users travel considerable distances to visit these trails – to first learn of a conflicting use (preventing the intended recreation) upon arrival, is clearly not easily remedied. It would result in a significant inconvenience; in many cases resulting in cancellation of the planned activity and frustrating travel back (home).” (Commenter 37)

Response: Posting notice of activities at the trailheads gives the user options, such as hiking in the opposite direction, if they deem the drilling operation to be incompatible with their hiking experience. The National Forest System is mandated by congress to provide multiple uses, but not every use on every acre. Sometime those uses conflict with each other. The intent of management prescriptions for a given area is to integrate resource management activities to minimize potential conflicts, not eliminate them. The perception of significance of imposing restrictions to one user to reduce “inconvenience” to another user depends upon which user you are. The EA determined the impacts to recreation to be minimal (EA, page 52).

iii. Working Forest: “Finally, I find the statements made in the Cumulative Effects summary on page 52 objectionable. The characterization that ‘[d]isturbance due to noise would be very minor and short term’ and that ‘[v]isual impacts would be subordinate to the natural landscape, and would not be noticed by most recreationists’ [my emphasis] is highly subjective and may be completely inaccurate, depending on the final number and (as yet undefined) location of borings. The next statement regarding recreational visitors, that ‘mineral exploration would enhance variety and provide another feature to draw their attention, and an opportunity to learn more about activities that occur in a working forest’ is patently absurd! For hikers and backpackers, many of whom enjoy our National Forests for the natural beauty, solitude and sense of wildness they provide, an encounter with loud, mechanized equipment and the associated perturbations to provide access before and hide damages after, would have absolutely no positive benefits. Assuming the person who wrote this text doesn’t really work for Doe Run Company, they apparently have never witnessed hard rock drilling nor taken a walk in a peaceful woods.” (Commenter 37)

“EA 52 says prospecting would ‘enhance variety’ and attract visitors to learn more about a working forest. This is not an environmental consideration or at least not a
positive one. By the same logic, you might was well open a theme park in the forest.” (Commenter 31)

Response: Both commenters refer to the same sentence, but quote only portions of it. The full sentence from the EA, page 52, states:

For many, (but not all) of those that do notice the short-term activity and the localized impacts on the vegetation, this mineral exploration would enhance variety and provide another feature to draw their attention, and an opportunity to learn more about activities that occur in a working forest.

The twelve potential drill sites within the same 80-acre permit application area as the Ozark Trail would have a minimal effect on recreation users (EA, page 52).

21. Effects to Soil

a. Equipment: “What kinds of effects will equipment used to clear the land in the drilling areas have on the soil?” (Commenter 44)

Response: Equipment limitations for each of the soils in the project area are displayed in Table 4, EA page 33. Effects of the proposal, including drilling equipment, on soils are discussed in the EA on pages 29 and 32. There would be no detrimental soil disturbance effects in Alternative B. Alternative C would reduce the potential for soil erosion and displacement to a much greater extent than Alternative B.

b. Erosion: “With land cleared for drill sites and access roads, is there increased potential for erosion due to lack of ground cover?” (Commenter 44)

Response: Potential for erosion is analyzed in the EA. See Response to Comment 21a. Mitigation measures designed to minimize potential erosion are S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, and S11 (EA, pages 13 & 14.)

22. Effects to Water resources

a. Effects on people and animals who consume water: “No one knows what this will do to the aquifer. The water could become contaminated by the drilling. What about the effect this will have on the animals and people who consume the water?” (Commenter 8)

Response: Numerous exploratory holes have been drilled in the area in the past, and there have been no documented adverse effects from these activities. The EA, pages 20-25 discuss the effects of the various alternatives. In summary, it was determined that there might be a short term increase of runoff while the activity is going on, however there would be no long term negative effects. Mitigations to protect water quality include S1, S2, S3, S4, S5, S5, S7, S8, S9, S10, S11, W1, W2, and W3 (EA pages 12-15).

b. Impacts to ground and surface water resources: “Potential impacts to water quality were not sufficiently addressed in the EA. The EA notes that the ’permit area lies within a large region of well-developed karst terrain that is characterized by the presence of caves, springs, sinkholes, and gaining and losing streams.’ (EA, p.19). However, it also states that ‘[t]here is no documentation that water quality or quantity of the District’s streams or springs has diminished as a result of previous drilling.’ (EA, p.48). This indicates that the effects are not known, either good or bad. Before the Forest Service permits up to 232 new exploratory borings in a karst area, it should develop a better understanding of the impacts on groundwater and surface water resources.” (Commenter 14).
Response: The existing conditions of the water resources of the area were addressed in the EA pages 19-20. Water quality information in the area has been collected for several years by the US Geological Survey (USGS), and has found that the water quality of the area is good. The statement on page 48 of the EA states that ‘[t]here is no documentation that water quality or quantity of the Districts’ streams or springs has diminished as a result of previous drilling.’ This statement, although poorly worded, means that there have been no documented adverse effects on the water quality of the area. This does not mean that there are not indications of consistent good water quality. Evidence of good water quality is found in the data collected by the USGS – Water Resources Division (project file, Folder D, Document 5d and 5e). Also, no streams in the area have been listed as impaired by the Missouri Department of Natural Resources because of exploratory drilling.

c. Impacts to Huzzah Creek and Courtois Creek. “The EA also fails to consider the impact on the Huzzah Creek and Courtois Creek. It is our understanding that no lead mining has occurred in these watersheds in the past. What will the impact be of drilling and mining in the watershed of these popular float streams?” (Commenter 14)

Response: The EA specifically mentions the analysis area includes Huzzah and Courtois Creek in the EA on page 20. Pages 20-25 discuss the effects of the various alternatives. In summary it was determined that there might be a short-term increase of runoff while the activity is going on, however there would be no long-term negative effects. Pages 19 and 20 in the EA discuss the existing condition of proposed lease areas. Numerous exploratory drill holes have been placed in the general area in the past with no long-term effects on the surface and groundwater resources in the effected watersheds; there is no evidence that these prospecting permit sites would be any different.

d. St. François and Ozark aquifers: “On page A-2, test hole drilling and plugging is discussed as it relates to the St. François and Ozark aquifers. There is no mention or evidence given that this process is effective or that it doesn’t have a high failure rate. Residents in the area have attested to the significant reduction of spring flow rates and the loss of wells following previous test hole drilling. Test hole plugging, no matter how effective, does not prevent or remedy cracks, fissures and damage created in the Derby-Doerun Dolomite or Davis Formations by the drilling process. The potential for serious and irreparable damage to the most valuable resource the Ozark Region has – clean pure accessible water – is not worth the minimal economic rewards to be possibly gained by Doe Run’s extensive exploration for limited amounts of questionable quality, at best, mineral deposits. Doe Run and the Forest Service are risking high value assets – the regions irreplaceable water supply – against low value returns – poor quality mineral that both ASARCO and Cominco wisely gave up on – with no penalties incurred by either of them if the St. François and Ozark aquifers are harmed by test hole drilling.” (Commenter 40) “The quality of the aquifers is unknown. Shouldn’t that be determined prior to issuing prospecting permits?” (Commenter 44)

Response: Numerous rounds of exploratory drilling have been done in the past. All drill hole plugging is done to meet all state and federal guidelines. There has been no evidence that exploratory drilling has caused any adverse effects on the quality of the local groundwater supplies. The Ozark aquifer has been and continues to be the primary source of drinking water in the area. See Response to Comment 22e.

e. Effects of Past Drilling on Water Quality and Quantity: “The history of test hole drilling in the region pre-1950 (which this document totally ignores because its inclusion
would show evidence of wrongdoing by lead companies) and post-1950 test drilling have had documented adverse effects on local well levels and spring flow rates. The EA, chapter 3, pgs. 17-72 has eight entries under Environmental Effects with a sub-heading of Effects of Past Drilling on pgs. 54, 63, 64, 66, 68, 69, 70, and 71, but none of these entries deals with Effects of Past Drilling on water quality and quantity. The EA mentions these issues on pg. 7, but never addresses them. The blatant and obvious omission of the most critical aspect of this document – past adverse effects of past drilling on subsurface water quality and quantity and the unproven reliability and damaging effects of drilling and plugging test holes – is sufficient reason and ample evidence…to justify a rejection of Doe Run’s Prospecting Permit Request by you.” (Commenter 37, 40)

**Response:** Ground Water Recharge, Movement and Discharge were addressed in the project file, Folder D, document 5-e. This document addresses past and current studies of mining activities on the ground water resources of the area. Small fluctuations of water levels over time would be expected. In the most recent study conducted in 1999 by the U.S. Geological Survey (USGS) studied the Ozark Aquifer water levels (Kleeschulte, 2001). This study compared current water levels with water levels recorded before 1960. The USGS study determined that “no large cones of depression were present in 1999 in the Ozark aquifer” in relation to the pre-mining water table, thus the data indicated that the “water levels in the area changed little, if any, from pre-mining to 1999” (Kleeschulte, 2001). The Ozark aquifer is the major source of high quality drinking water in the area in the past and there is no indication that this would change at in the future based on the proposed activities.

Pages 54, 63, 64, 66, 68, 69, 70, and 71 of the EA do not address the past effects of drilling on water quality and quantity because those sections are looking at vegetation and biodiversity. Pages 25-27 of the EA address the cumulative effects on the water quality resources of the project area. In the past there have been numerous rounds of exploratory drilling on the National Forest with no long-term adverse effects on the water resources of the area.

**f. Effects of Frothing Agent:** “What happens if the frothing agent spills into a cavern system and flows through? What studies have been done to show the frothing agent doesn’t have any long-term effects?” (Commenter 37, 44)

**Response:** Page 20–21 of the EA addresses the use of a frothing agent and the procedures that are followed if a cavern is intersected during drilling. The frothing agents are biodegradable mixtures. There is no special warning on the Material Safety Data Sheets (project file Folder D, document 5f) and the substances are not regulated by the Missouri Department of Natural Resources or the U.S. Environmental Protection Agency.

**g. Hydrologic pathways:** “Has there been an analysis of the hydrologic pathways in the permit areas to understand where water may flow? Should one be conducted?” (Commenter 44)

**Response:** Over the years various dye tracing studies have been conducted by the Forest Service, USGS, Nature Conservancy, and the University of Missouri to gain a better understanding of the groundwater pathways in Missouri, and the project area. Numerous studies have been done to determine the losing reaches of the surface waters in the state, and in the project area. We have information on the pathways in the area (project record, Folder D-5d and e).
h. Short-term effects: “Are there short-term effects on water quality/ecosystem health? Are these a cause for concern?” (Commenter 44)

Response: The short-term effects on water quality were addressed in the EA (pages 20-25) for the various alternatives. If drilling were to proceed, there would be the possibility of a short-term increase in sediment runoff from the sites, however the mitigation measures would minimize and if possible negate any possible adverse effects. Any of the short-term effects that would occur after the mitigation measures would be minor, and yield no lasting effects, and should not be an area of concern.

i. Wetlands: “What analyses have been done to ensure wetlands will not be harmed? How effective are the mitigation measures proposed to protect wetlands? What type of evidence exists to support the measures?” (Commenter 44)

Response: Effects to water resources is discussed in the EA on pages 20-25. Further discussion of unique or sensitive areas is found on page 68. No adverse effects to wetlands were identified. Wetlands are protected by Special Stipulation 3(l) and mitigation measures S2, W1 (EA, pages 13 & 15).

Monitoring and evaluation is a continuous process on the Forest. This process is undertaken to determine the quality of project implementation. This process provides timely information about the outcome of decisions, and helps reassess or change the way we are implementing the forest plan. Interdisciplinary teams conduct monitoring activities to collect information on how effective the Standards and Guidelines are and to determine if the proper mitigation measures being implemented in the field. The results of this monitoring are compiled yearly in a Monitoring and Evaluation Report. The Fiscal Year 2000 Monitoring and Evaluation Report (project record, Folder D-9) indicates that the steps implemented to protect sensitive habitats, which encompasses riparian areas, seeps, fens, etc., were implemented in all projects and were proving effective at protecting the areas.

j. Stormwater permit. “Pursuant to 10 CSR 20-6.200, a stormwater permit will be required to be issued by this department’s Water Pollution Control Program in advance of any and all land disturbance activities, including any necessary road construction and clearing of drill sites, if Doe Run disturbs five acres or more of land in the aggregate. Those erosion control commitments specified in the EA should be incorporated in the company’s stormwater pollution prevention plan that will be required by the stormwater permit. Site-specific stormwater permits may be required for specific drilling sites, depending on the environmental conditions identified by Doe Run in the company’s application to this department for a stormwater permit. Examples of conditions of concern include but are not limited to losing streams, sinkholes, wetlands, and areas of sensitive species.” (Commenter 57)

Response: Forest Plan standards and guidelines are designed to protect resources during project implementation. Special stipulations in Alternative C provide further protection to areas of concern by not allowing drilling mud to flow into intermittent or live streams or sinkholes (3i) and prohibiting drilling within buffer zones associated with perennial streams, springs, sinkholes, or wetlands (3k).

k. Wastewater discharge permit. “Pursuant to 10 CSR 20-6.010(1)(B)7, a wastewater discharge permit would not be required for drilling operations that discharge drilling fluids such as frothing agents and bentonite muds onto the ground surface or into the
ground during drilling operations. However, a permit would be required if a violation of the water quality standards were to occur as a result of a release of sufficient quantities of these drilling materials to surface or ground waters.” (Commenter 57)

**Response:** Mitigation measures W1, W2, and W3 are designed to minimize potential impacts to water quality.

1. **Drill pits.** “The sinkholes (noted in the report) and losing stream segments in this area increase the risk of contamination of groundwater from on-site materials. DNR [Department of Natural Resources] recommends the use of potable water for drilling purposes to minimize risks to groundwater quality. One does not routinely consider lining drill pits for mineral exploration wells. However, because of the permeable bedrock, the driller should take all precautions to keep drilling fluids in the pit and isolated from the groundwater.” (Commenter 57)

**Response:** Special Stipulation #6 states a hydrological assessment based on the situation would be made by an authorized Forest Officer. Mitigation measure W3 requires effluent pits for every drill site. We are committed to maintaining the integrity of the groundwater.

m. **Faults.** “There is no discussion of structure (i.e. faults) within the area, and how this may affect groundwater flow or drilling operations.” (Commenter 57)

**Response:** The effects analysis of Water Quality, beginning on page 19 of the EA, contains extensive discussion of faults in the project area, including cave entrance and sinkholes, and how drilling may impact the resource. The analysis considers the effects of drilling in a karst terrain (EA, 19) and provides mitigation measures and special stipulations to minimize potential impacts to groundwater quality and quantity (EA, pages 12-15 and Appendix C).

n. **Grasshopper Hollow (page 31):** “The text notes that Grasshopper Hollow Natural Area falls within the area considered for cumulative effects, but there is no mention of what the effects are, or how they may affect Grasshopper Hollow. This fen complex is dependent upon stable surface water and groundwater conditions. Drilling impacts on this area need to be addressed.” (Commenter 57)

**Response:** The EA considered effects to Grasshopper Hollow Natural Area and determined that the cumulative effects would be negligible (page 25). Potential impacts to fens are discussed in the EA on pages 23, 26, 39, 40, and 65. Fens are protected specifically by mitigation measure W1 (EA, page 15). Results from dye tracing near Grashopper Hollow were used in the analysis.

23. **Outdated Forest Plan.** “Finally, the practice of tiering to a 15-year-old EIS prepared in conjunction with the Forest Plan does not meet the requirements of NEPA. Numerous changes have occurred since that EIS was prepared both in our knowledge of what causes environmental harm and the activities on the Mark Twain National Forest. In addition, some species have returned to the Forest in the recent past (e.g., the black bear and mountain lion) that require large blocks of core habitat free of human disturbance. A fresh look is required at all these issues in a comprehensive EIS.” (Commenter 14)

**Response:** The current Forest Plan has been amended 25 times. Each amendment
required an environmental analysis. Additionally, supplemental information reports have documented consideration of new information as directed in FSH 1909.15(18.1). One of these reports dealt with the Regional Forester’s Sensitive Species list update of February 2000. Missouri Department of Conservation has not elevated concern for the black bear or mountain lion in Missouri (EA, page 70).

24. Acreage Limitations for permits and leases. “The EA does not indicate how many acres are covered by existing Doe Run permits and leases. The applicable regulation, 43 C.F.R. 3503.37, limits the combined acreage that can be held in permits and leases to 20,480 acres in one state. Information posted on the BLM’s web site indicates that more than 40,000 acres are already under permit or lease on the Mark Twain, but does not specify the holders. The Forest Service should disclose the cumulative acreage covered by existing permits and leases held by Doe Run to ensure that it is complying with this regulation.” (Commenter 14, 55)

Response: Hardrock mineral permits and leases committed to development contracts are exempt from state and nationwide acreage limitations “to justify large scale operations for the discovery, development, production, or transportation of ores” (43 CFR 3517.10 & 11). In Missouri, the Doe Run Company holds 33 leases in 5 development contracts for a total of 32,970 acres. Three leases totaling 653 acres held by The Doe Run Company count toward the 20,480-acre limitation.

25. Number of permits: “It is my understanding that the seven prospecting permits Doe Run is seeking exceeds the total number allowed one company under federal regulations. Under 36 C.F.R., section 228.60 (d); any person or entity is prohibited from holding more than three prospecting permits at any one time.” (Commenter 40)

Response: 36 CFR Part 228 is not applicable to the lands administered by the Mark Twain National Forest. All lands in the project area were acquired under the Weeks Law, which is governed by the President’s Reorganization Plan No. 3 of 1946 (see EA, page 2). Permit acreages are limited under 43 CFR 3503.37. The seven prospecting permits do not exceed the acreage limitations. See Response and Comment 24.

26. Biodiversity

a. Sensitive Areas: “The presence of biologically sensitive areas are mentioned in the EA. Have those been identified in the project permit areas, and are any measures being taken to protect those areas?” (Commenter 44)

Response: Sensitive areas in the project area are described in the EA on page 68. Mitigation measures, special stipulations, and Forest Plan Standards and Guidelines are designed to minimize impacts to sensitive areas.

b. Evaluation criteria: “How will the impacts on biodiversity be evaluated, especially since understand of the systems and populations is lacking?” (Commenter 44)

Response: The effects to biodiversity are described in detail in the EA on pages 57-72. The analysis utilizes guidance provided by the Council on Environmental Quality’s 1993 report “Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act” (EA, page 57). The report identifies eleven General Principals; the EA analyzes those eleven plus one.

27. Wildlife

a. Monitor populations: “Perhaps wildlife populations should be evaluated biannually to ensure drilling activities aren’t having an impact.” (Commenter 44)
Response: Various forms of monitoring are done on the forest. These are discussed in the wildlife section of the EA and in the BE (pages 44-46 and Appendix D). The Salem and Potosi/Fredericktown Ranger Districts also do Forest Plan monitoring with teams of interdisciplinary specialists throughout the year. This monitoring is done to ensure that management activities are in compliance with the Forest Plan and site-specific NEPA documents.

b. Roads: “How will roads affect species movement?” (Commenter 44)
Response: The effects of temporary roads are discussed in the wildlife section of the EA and in the BE (pages 46-49 and Appendix D).

c. Salamanders: “What evidence exists to support the claim that salamanders will indeed be all right?” (Commenter 44)
Response: Salamanders are discussed in the biodiversity section of the EA on page 65. This paragraph references a Supplement Information Report prepared by the Forest Service that determines that the Forest Plan addressed habitat needs for these species and acknowledged the importance of mature/over-mature forest with dead, downed, and rotten woody debris. The Prospecting Permit project area is currently 98% forested and would remain so after any of the alternatives are implemented. Additionally, woody debris from the drill sites will be left in place for wildlife habitat (see Response to Comment #18.)

28. Threatened and Endangered Species

a. Indiana Bat “The Federally Endangered Indiana bat needs to be considered. The analysis needs to consider all available research. The ESA requires the Forest Service to use ‘the best scientific and commercial data available’ to fulfill its Section 7 obligations.” (Commenter 9)
Response: The Federal BE in Appendix D of the EA discusses the effects of the project on Indiana bats. The BE was sent to US Fish and Wildlife Service (USFWS) and was concurred with on 1/9/02. The list of reference material for the EA and BE is extensive. The comments do not offer any significant new data unfamiliar to the Forest.

i. Cave Hollow Cave: “The Forest Service acknowledges that a hibernation cave for Indiana Bat, known as Cave Hollow Cave, is located 3 miles from the project area. (EA at 39). Allowing exploratory drilling that close to a documented hibernacula would definitely impact this endangered species.” (Commenter 55)
Response: Protection for Cave Hollow Cave Area of Influence (AOI) was established in the AOI EA and Decision Notice. Seven acres of the extreme outer edge of the Cave Hollow Cave AOI overlaps with Permit #049256. Drilling is allowed within Areas of Influence. The proximity of the project to Cave Hollow Cave is discussed in the federal BE in Appendix D. The affects of the project to the bats that use this cave are also discussed in the BE. USFWS concluded there is no jeopardy to Indiana bats.

ii. Cave Hollow Cave Area of Influence: “Under the proposed [non-significant Forest Plan amendment for establishing Areas of Influence, November 2001], no activity would be allowed within 5 miles of a hibernacula unless the activity would enhance the hibernacula. Since Cave Hollow Cave is within the 5 mile radius, the Forest Service would be acting contrary to its own proposed Forest Plan if it
allowed exploratory drilling under Does Run’s present application.” (Commenter 55) “The Forest Service clearly needs to make the Amendment decision first. It is putting the cart before the horse.” (Commenter 9)

Response: The Area of Influence (AOI) Decision Notice was signed 11/16/01. Seven acres of permit #049256 fall within the primary range of the Cave Hollow Cave Area of Influence. The AOI Decision Notice allows drilling in the areas proposed for prospecting permits (AOI DN and EA, page 17).

iii. Surveys: “We would point out that the Forest Service has not surveyed the project area for Indiana bats. We would remind you what Judge Clarke had to say about this. We have previously raised the issue in appeals that mist netting misses most of the Indiana bats that are present as they are able to avoid capture. Why is not the analysis addressing this?” (Commenter 9)

Response: Surveys are documented in the Federal BE on page D-14. The EA references the BE on page 38 and discusses surveys on page 42. The Mark Twain National Forest recognizes that it is difficult to survey forest bats, including the Indiana bat. Nevertheless, we are using both mist-netting and Anabat technology to obtain information on Indiana bat habitat use of the Mark Twain National Forest. The BE for this project addresses the possibility that Indiana bats may be in the project area. The US Fish and Wildlife Service concurred with the BE on 1/9/02.

iv. Suitable roost trees: “The BE claims, ‘Within the upland forest in the Doe Run Prospecting Permit Project area, there are dead trees of all sizes, cavity trees, trees with flaking bark, and trees with broken off limbs that would be suitable for summer roosting.’ How does the Forest Service know these trees are in fact suitable? Have they figured out a way to ask the bats? The last time we checked, no one had figured out what exactly makes a roost tree suitable. Just because bats have used trees of this kind, one cannot logically conclude (unless they use Forest Service logic) that all trees of these types are ‘suitable.’ For example, there are also temperature requirements for the trees. What kind of analysis has the Forest Service done to determine how many of these trees have the proper temperature requirements? Please disclose how the Forest Service determined which trees met these requirements, who did the survey, their methodology, and what the results were. Or is the Forest Service making this up?” (Commenter 9)

Response: The Forest Service used information in the US Fish and Wildlife Service’s Biological Opinion on the Impacts of Forest Management and other Activities to the Gray Bat, Bald Eagle, Indiana Bat, and Mead’s Milkweed on the Mark Twain National Forest, June 23, 1999 (BO) on pages 74 and 75 to determine that there would be suitable roost trees in the project area. The reasonable and prudent measures on page 79 of the BO lists the characteristics of suitable roost trees. The US Fish and Wildlife Service concurred with the BE on 1/9/02.

Reproductive females: “The BE states: ‘The project area is about 30 miles from the nearest documented capture site of a reproductively active female Indiana bat, and over 150 miles south of the nearest documented Indiana bat maternity colony.’ This does not make sense. Please clarify. Does not the capture of a reproductively active female indicate the presence of a colony? Is the Forest Service saying some females
do not live in colonies? If so, please provide the scientific evidence of this.”
(Commenter 9)

**Response:** The Mark Twain National Forest Programmatic Biological Assessment, September 1998, (BA) states on page 58 “The presence of five records of reproductively active females in Iron, Jefferson, Pulaski, and Washington counties, suggest that maternity colonies are possible in the Ozarks region of the state” (emphasis added). Researchers have not determined if colonies actually occur in these counties. To date, no maternity colonies have been documented nearer than the 150 miles stated in the BE. The project area is 30 miles from the nearest documented reproductively active female capture site. If a maternity site were near that location, it would be far outside the project area boundary.

The BE does not state that these reproductively active females do not live in colonies. The BE is simply taking information from the BA concerning locations of reproductively active females and documented locations of maternity colonies. The BE (pages D-16 through D-19) discussed potential effects of the project to suitable roost trees and foraging habitat in the unlikely event that reproductive females were in the project area. The US Fish and Wildlife Service concurred with the BE on 1/9/02.

**v. Increased bat population:** “Another issue the BE fails to address is what happens if the bats start to recover and their numbers increase in the area. Based on their low numbers in the caves and the Forest Service failure to actually look in the project area, the Forest Service claims it is unlikely that the trees would be used. If there are more bats, it is more likely the Forest Service and Doe Run would kill Indiana bats.” (Commenter 9)

**Response:** The Missouri Department of Conservation carefully monitors Indiana bat hibernacula and maternity colonies in Missouri. All their survey information indicates that Indiana bats continue to decline in Missouri. Increasing numbers would be unexpected, but good news for the state. Increases in bat populations in the area would be considered new information and would be dealt with accordingly. The US Fish and Wildlife Service concurred with the BE on 1/9/02.

**vi. Computerized BE program:** “This statement is inadequate: ‘The computerized BE program identified acres of Indiana bat potential habitat that were maintained, enhanced, created, or reduced by each of the alternatives proposed for the Doe Run Prospecting Permit Project.’ The BE does not give any information on what the computer program considers suitable. There is no information on the methodology. Garbage in, garbage out. Perhaps the Forest Service has fixed the program to show what they want instead of telling the truth. The Forest Service needs to give more information than claim a computer program says there is no problem.” (Commenter 9)

**Response:** The computerized BE program was developed as one tool to help quantify habitat for Threatened, Endangered, and Sensitive species. The habitat for Indiana bats in the program is based on habitat parameters described in “Literature Summary and Habitat Suitability Index Model, Components of Summer Habitat for the Indiana Bat, Myotis Sodalis” by 3D/Environmental (Romme, Tyrell, and Brack). These parameters were compared to data in the Mark Twain National Forest Combined Data System (CDS) to identify all acres that could be suitable Indiana bat habitat in a project area. Suitable Indiana bat habitat in the BE program includes
such things as mature and immature forest with moderate density canopy closures, forest with snags and dens identified as a within stand feature, and ponds for drinking water.

The results from the computerized BE program are considered a good indication of relative changes to habitat from implementing the alternatives described for a project. The computerized BE program is not the only tool used to determine potential effects to a species. Pages D-18 through D-23 include additional analysis of potential effects, using the best available scientific information, as well as the professional judgment of the biologist conducting the analysis.

The US Fish and Wildlife Service concurred with our BE on 1/9/02.

vii. Loyalty to habitat: “The BE claims: ‘Drilling would remove some trees with structural characteristics that make them suitable roost trees. However, in Alternatives B and C, over 98% of the Doe Run Prospecting Permit Project Area would not have any drilling activity. In addition, all drilling in Alternatives B and C will comply with the BO terms and conditions requiring suitable roost trees to be maintained. All permit areas will have den trees, snags, and large live trees left at the specified number (at a minimum). There would be abundant suitable roost trees remaining in the project area to provide roosts for Indiana bats.’ The Forest Service demonstrates their complete lack of credibility by failing to even mentioning (sic) the loyalty to habitat issue. The Forest Service knows full well bats are loyal to their habitat. This is just more proof the Forest Service wants to exterminate the bats. Fortunately, neither NEPA or (sic) the ESA allows the Forest Service to ignore effects.” (Commenter 9)

Response: Loyalty to habitat (site fidelity) is discussed in the BE, and is discussed at length in the MTNF Programmatic BA and the Programmatic BO. Habitat requirements described in the BE state that the nearest winter habitat (hibernacula) to the project is three miles from the project area. Summer male habitat includes roosting and foraging areas close to the hibernacula. The BE describes maximum reported foraging distances of 1.2 miles from the hibernacula in Missouri, and 2.6 miles in Kentucky. Due to the distance from the hibernacula, it is possible the males would use parts of the project area for foraging or roosting. The project area is about 30 miles from the nearest documented capture site of a reproductively active female Indiana bat, and over 150 miles south of the nearest documented Indiana bat maternity colony. Due to the distance from these known areas and the fact that there is little riparian or floodplain forest in the project area, it is highly unlikely females would use this area (Appendix D-16). (The US Fish and Wildlife Service concurred with the BE on 1/9/02.)

The MTNF Programmatic BA discusses maternity roost trees at length and cites several recent references in its discussion. The discussion focuses on the research findings of a high degree of site fidelity to specific trees seasonally, and that bats do not necessarily use the same tree indefinitely because conditions of the trees change over time. There is agreement that “Management of an area for a perpetual supply of potential roost trees is much more important than trying to manage individual roost trees (Callahan et al., 1997; Kiser and Elliott, 1996; Clawson, 1986; Romme et al., 1995)” (MTNF Programmatic BA, pp.21-23).

The MTNF Programmatic BO has an extensive discussion on roost trees, noting that
Indiana bats exhibit varying degrees of site fidelity to roosts, and that the Indiana bat may be more adaptable with regard to roosts than previously believed (MTNF Programmatic BO, pp. 43-45).

Many of the reasonable and prudent measures and terms and conditions outlined in the BO are in place to minimize adverse impacts to Indiana bats due to the removal of potentially occupied, suitable roost trees. These measures are non-discretionary in implementing project activities and are incorporated into the proposed actions and/or mitigation measures in The Doe Run Company Prospecting Permits Project.

viii. Warm winters: “The BE claims: ‘If drilling was completed during late fall through winter, there would be no potential for direct take, since the bats would be hibernating.’ When it gets warm, sometimes the bats come out in the middle of winter. The BE completely fails to address this.” (Commenter 9)

Response: The BE addresses the effects of the project on Indiana bats including the potential for direct take from removal of occupied roost trees regardless of season. The US Fish and Wildlife Service concurred with the BE on 1/9/02.

ix. Unoccupied Habitat: “The BE states, ‘There is...no unoccupied habitat required for recovery within the Doe Run Prospecting Permit Project Area.’ How does the Forest Service know this? How much unoccupied habitat is required for recovery? What is this based on? The Forest Service’s desire to exterminate the Indiana bat? This is one of the flaws of the way the Forest Service looks at the Indiana bat. The Forest Service and USFWS have never considered what will be required to recover the Indiana bat as required by the ESA. Without any kind of analysis of what it will take to recover the bats, the Forest Service cannot conclude the unoccupied habitat is not needed.” (Commenter 9)

Response: The BE references the Recovery Plan for the Indiana Bat. The recovery plan discusses recovery of the species. The Biological Assessment discusses recommended recovery actions and effects of recommended recovery actions on pages 31-34. The USFWL is considering what will be required to recover the species and is in the process of revising the recovery plan in accordance with the Endangered Species Act. Any new information will be dealt with accordingly.

b. Gray Bat “The Forest Service also acknowledges that a cave occupied by the federally endangered Gray Bat is located 3.5 miles from the project area. (EA at 39). Exploratory drilling just 3.5 miles from a documented Gray Bat cave could potentially impact this federally endangered species.” (Commenter 55)

Response: The Federal BE in Appendix D of the EA discusses the effects of the project on gray bats. The BE was sent to US Fish and Wildlife Service and was concurred with on January 9, 2002 and concluded “any potential negative impacts [on gray bats]...to be so remote as to constitute an insignificant or discountable effect.”

c. Hine’s Emerald Dragonfly: “This federally endangered species was not known to exist in Missouri prior to 1999 when a Missouri Department of Conservation biologist discovered Hine’s Emerald Dragonfly at Grasshopper Hollow State Natural Area in Reynolds County,
one of the counties within the proposed project area. It was found there again in 2000. (EA at 39). This demonstrates that a viable breeding colony of Hine’s Emerald exists within the proposed project area. In addition, the Hine’s Emerald was located in 2001 in a second location, known as Barton’s Fen, which is also within the project area. (EA at 39). Hine’s Emerald has a limited geographic range in Missouri, according to information available at present. Because it is federally endangered and because the ONLY TWO LOCATIONS where it has been found in Missouri are within the project area, the Forest Service should not allow any prospecting near these two sites nor should it allow any prospecting near any habitat which could support this species.” (Commenter 31 & 55)

Response: The EA states on page 39 that “no suitable habitat is available with the project area for the Hine’s Emerald Dragonfly”. This species is also discussed on page D-4 of the BE where it states “there are no fens, calcareous seeps, or wetlands meeting the habitat requirements of this species within the Doe Run Prospecting Permit Project Area”. The Grasshopper Hollow site is 1.5 miles south and the Barton Fen site is 2 miles southeast of the project area. On January 9, 2002, the US Fish and Wildlife Service concurred with our Biological Evaluation’s determinations on Threatened and Endangered Species, which included Hine’s Emerald Dragonfly.

d. Effects Determination. “The Forest Service is not making the proper effects findings. We explained this issue in our Eastwood Appeal. We include it by reference. Please address these reasons in the Response to Comments. When we had the appeal resolution meeting, Rich Hall acknowledged he was not aware of any directive, regulation, or guidance that says the way the Forest Service making effects determinations is allowed. But he said that does not mean there is not any. So if there is any guidance that says what the Forest Service is doing is allowed, point it out or admit none exists.” (Commenter 9)


The context of the Doe Run Prospecting Permit Project Biological Evaluation is presented in the beginning of that document: “The purpose of this Biological Evaluation (BE) is to identify site-specific effects of the proposed action and alternatives to federal proposed, threatened, and endangered species. This evaluation will compare the site-specific effects with those disclosed in the 1998 Mark Twain National Forest Programmatic Biological Assessment (BA). The BE also documents compliance with the Terms and Conditions listed in the June 23, 1999 U.S. Fish and Wildlife Biological Opinion (BO).” (BE, p. D1).

The purpose of the 1998 Mark Twain National Forest Programmatic Biological Assessment (BA) was to, “...document potential effects of continued implementation of the existing Forest Plan on populations of federally endangered gray bats (Myotis grisescens), Indiana bats (Myotis sodalis), ... pink mucket pearly mussel (Lampsilis orbiculata); populations of federally threatened bald eagle (Haliaeetus leucocephalus), ... and their respective habitat on the Mark Twain National Forest.” (BA, pp. 1-2). The BA disclosed the following effects determinations for continued implementation of the Forest Plan:

Bald Eagle –
BA Summary, p. 5: LIKELY TO ADVERSELY AFFECT “(potential to remove/effect communal night roost trees)”

BA, Bald Eagle Section, p. 18: “Continued implementation of the Forest Plan, as amended, MAY AFFECT – IS LIKELY TO ADVERSELY AFFECT bald eagle wintering habitat. Forest activities will have a BENEFICIAL EFFECT on habitats traditionally used by eagles on the Forest. . . . There will be NO EFFECT to nests since known are known to occur on the Forest . . .”

Gray Bats –

BA Summary, p. 5: LIKELY TO ADVERSELY AFFECT “(potential for disturbance at maternity roosts and hibernacula)”

BA Gray Bat Section, p. 18: “MAY AFFECT – IS LIKELY TO ADVERSELY AFFECT – It is possible that, in spite of the best efforts, there could be some human disturbance to gray bats as a result of recreational caving or intentional breaching of closed caves. Depending on the timing, scale, and intensity of disturbance, individual bats or individual cave populations of bats could be disturbed, harmed, or killed. Continued implementation of the Forest Plan and projects predicated upon it may also have BENEFICIAL EFFECTS on gray bat habitat and populations by protecting habitat and reducing human disturbance.”

Indiana Bat –

BA Summary, p. 5: LIKELY TO ADVERSELY AFFECT “(potential for disturbance at maternity roosts and hibernacula)”

BA Indiana Bat Section, p. 35: “. . . continued implementation of the Forest Plan, as amended, MAY AFFECT – IS LIKELY TO ADVERSELY AFFECT POPULATIONS OF Indiana bat using the Mark Twain National Forest. A MAY AFFECT – IS NOT LIKELY TO ADVERSELY AFFECT determination is also made since there will be potential BENEFICIAL effects on Indiana bat habitat through continued implementation of the Forest Plan, as amended.”

Pink Mucket Pearly Mussel –

BA Summary, p. 5: “MAY AFFECT - NOT LIKELY TO ADVERSELY AFFECT”

BA Pink Mucket Pearly Mussel Section, p. 15: “A MAY AFFECT - NOT LIKELY TO ADVERSELY AFFECT DETERMINATION is made for habitat of pink mucket pearly mussel . . .”

The Forest Service submitted the BA to the U.S. Fish and Wildlife Service for formal consultation on and requested concurrence on the effect determinations (Request for Concurrence Letter; BO, pp. 1-2). “In a letter dated October 5, 1998, the [U.S. Fish and Wildlife] Service: 1) concurred with Forest Service’s determinations that certain actions to implement the LRMP would be likely to adversely affect the Indiana bat, gray bat, bald eagle . . ., 2) indicated that the initiation package associated with the Forest Service’s request for formal consultation was adequate, and 3) announced that formal consultation between the two agencies had begun.” (BO, p. 2). “In the same
letter, the [U.S. Fish and Wildlife] Service concluded that . . . a ‘no effect’ determination was appropriate for . . . pink mucket pearly mussel . . . ” (BO, p. 2).

The results of formal consultation are contained in the June 23, 1999 U.S. Fish and Wildlife Biological Opinion (BO). The BO states that the, " . . . scope of effects for specific projects developed through the continued implementation of the LRMP on the MTNF falls under the umbrella of this consultation . . .” (BO, p. 88). Correspondingly, the Doe Run Prospecting Permit Project Biological Evaluation (BE) tiers to and relies on the information contained in the BA and BO.

The BO also discloses that (BO, p. 88):

“The terms and conditions associated with the reasonable and prudent measures outlined in this opinion will minimize the impact of the incidental take identified for the gray bat, bald eagle, and Indiana bat on both a programmatic and site specific level; the protective measures outlined herein for the entire MTNF are applicable to individual projects yet to be identified.

If after adhering to the terms and conditions associated with the reasonable and prudent measures provided in this opinion, the Forest Service determines that activities on a project level are likely to adversely affect the gray bat, bald eagle, or Indiana bat, the Service would request that formal consultation be initiated.

Any individual project that results in the level of incidental take identified in this opinion to be exceeded would necessitate the reinitiation of formal consultation as outlined above.

The Forest Service will continue to conduct site-specific project analyses to ensure that each individual action follows recommendations set forth in this opinion.

The Forest Service will continue to review all site-specific projects to ensure that there is strict adherence to the terms and conditions associated with the reasonable and prudent measures outlined in this opinion and that incidental take levels identified in this opinion are not exceeded.”

The Doe Run Prospecting Permit Project Biological Evaluation (BE) analyzes and discloses the site-specific effects to the applicable listed species, and further incorporates by reference the analysis and findings from the BA and BO.

Bald Eagle –

Site-specific effects are addressed at pages 5 to 10 of the Biological Evaluation. The following effect determination was made, "Activities proposed in the Doe Run Prospecting Permit Project Area were also described and effects identified in the BA and BO. Effects of project activities have been determined by this analysis to be the same as effects described in the BA and BO. . . . The Doe Run Prospecting Permit Project activities (all alternatives) will comply with RPM’s and TC’s of the 6-23-99 BO. There will be no additional effects beyond those previously disclosed and addressed in the Forest Plan Biological Assessment and Biological Opinion.” (BE, pp. 9-10).
Gray Bats

Site-specific effects are addressed at pages 10 to 14 of the Biological Evaluation. The following effect determination was made, “Activities proposed in the Doe Run Prospecting Permit Project Area were also described and effects identified in the BA and BO. Effects of project activities have been determined by this analysis to be the same as effects described in the BA and BO. . . . The Doe Run Prospecting Permit Project activities (all alternatives) will comply with RPM's and TC's of the 6-23-99 BO. There will be no additional effects beyond those previously disclosed and addressed in the Forest Plan Biological Assessment and Biological Opinion.” (BE, pp. 13-14).

Indiana Bat

Site-specific effects are addressed at pages 14 to 23 of the Biological Evaluation. The following effect determination was made, “Activities proposed in the Doe Run Prospecting Permit Project Area were also described and effects identified in the BA and BO. Effects of project activities have been determined by this analysis to be the same as effects described in the BA and BO. . . . The Doe Run Prospecting Permit Project activities (all alternatives) will comply with RPM's and TC's of the 6-23-99 BO. There will be no additional effects beyond those previously disclosed and addressed in the Forest Plan Biological Assessment and Biological Opinion.” (BE, pp. 23-24).

Pink Mucket Pearly Mussel

Site-specific effects are addressed at pages 23 to 25 of the Biological Evaluation. “Because a determination of ‘May Affect – Not Likely to Adversely Affect’ was made in the programmatic BA, and concurred with by FWS for pink mucket pearlymussel, formal consultation was not requested for this species. Thus the Biological Opinion does not address this species. Therefore there are no Reasonable and Prudent Measures or Terms and Conditions to comply with.” (BE, p. 25).

The following effect determination was made, “There is no potential habitat within the project area. . . . There would be no additional effects to pink mucket pearlymussel or its habitat beyond those previously disclosed and addressed in the Forest Plan Biological Assessment.” (BE, p. 25).

The Forest further consulted with the U.S. Fish and Wildlife Service on these project-specific effect determinations. The U.S. Fish and Wildlife Service concurred with the findings made in the BE on January 9, 2002.

29. Fragmentation

a. Species impacted: “Is there any support for the claim that species won’t be effected (sic) by fragmentation that will occur from clearing areas for drilling? Specifically, which species would benefit from clearing? Which will be hurt? How has that been determined?” (Commenter 44)

Response: Affects to wildlife species are discussed in the Wildlife section of the EA on
pages 46-49. Fragmentation and rare and ecologically important species are discussed in the Biodiversity section of the EA on pages 62-68.

b. Forest Fragmentation impacts on Cerulean warbler and other Neotropical Migrant songbirds. “The discussion of Neotropical migrant songbirds in the EA and Appendix D is inadequate and incomplete. The Forest Service concludes that a maximum of 125 acres out of 8.756 acres of the project area, or 1.4%, would be lost due to project activities such as road building and the clearing of temporary openings (D-53). It then implicitly dismisses this amount as de minimis based solely on numbers, without examining the nature and impact of the fragmentation on Neotropical migrant songbirds. It is not the amount of total acreage lost, but rather the nature of forest fragmentation, that must be analyzed in order to understand the impact of forest fragmentation on Neotropical migrant songbirds. However, the Forest Service did not adequately examine either the nature of forest fragmentation or the impact of forest fragmentation in its EA.” (Commenter 31, 41, 44, 55)

Response: The EA states that 9.5 acres to 125.5 acres of vegetation could be cleared as a result of the project. These areas would not be “lost” or remain as permanent openings. Sites are fertilized, limed, mulched, and seeded with an annual cover crop to hold the soil and encourage the growth of trees and shrubs. Affects to wildlife species are discussed in the Wildlife section on pages 47-49 of the EA. Fragmentation (including the “nature of forest fragmentation” and the impacts to neotropical migrant songbirds) are discussed in the Biodiversity section on pages 62-68 of the EA. Neotropical migrant songbirds that are Regional Sensitive Species (RFSS) are discuss in the RFSS BE on pages D-53-69.

c. Contradictory conclusions about fragmentation. Commenter 55 made the following statements. “The Forest Service concludes:

‘Detrimental effects [of fragmentation] appear to be more a result of conversion of forest to permanent non-forest uses rather than a result of manipulations of forest vegetation to create various successional stages.’ (EA at 66).

“No supporting data of any type, from any source, is given for that broad statement. On the contrary, forest fragmentation within existing forests is scientifically documented as a primary cause of Neotropical migrant decline. (See attached Petition for Cerulean Warbler and other attached articles). The above conclusion of the Forest Service is simply inaccurate. It is also contradicted by the following statement two pages later:

‘So while the creation of small openings like drill sites provides habitat for some Neotropical migrants, it also provides habitat for species that are a problem for forest interior Neotropical migrants.’ (EA at 68).”

“Forest fragmentation is not benign. It is another nail in the coffins of the Neotropical migrant songbirds.”

Response: The first quote is taken out of context. The paragraph in which this sentence occurs starts out with “Recent research by the North Central Forest Experimental Station [NCFES]…..” indicating that the statement is supported by research.

The second quote is also taken out of context. The sentence after this states: “
…recent research conducted by the North Central Forest Experiment Station has shown that in a primarily forested area, such as the project area, cowbirds are not affecting reproduction of neotropical migrants as much as where forests are heavily fragmented with agricultural land (particularly pasture used by cattle).

**Fragmentation and neotropical migrants are discussed in the Biodiversity section of the EA on pages 62-68.**

30. **EA used incorrect Code of Federal Regulation citation for keeping drill site locations confidential.** Commenters 14 and 58 pointed out that the EA cited the incorrect regulation when explaining why the initial drill site locations were not disclosed.

“The location of the initial bore holes is not disclosed in the EA. Indeed, the EA states that the location of the bore holes are being kept confidential at Doe Run’s request ‘as allowed per 43 C.F.R. Part 3590.1-b.’ This regulation is no longer valid: it was repealed in 1998. See 63 FR 52946, October 1, 1998. Thus, in citing to a repealed regulation, the Forest Service has not provided any legal justification for keeping the location of the bore holes confidential.” (Commenter 58)

**Response:** The Environmental Assessment did use the wrong citation. The correct citation should have been 43 CFR 3503.40 through 45.

31. **Public Disclosure of Drilling Locations.** “The locations of proposed drill sites are of obvious interest to those who reside in the area and those who use it for recreation or other purposes.” (Commenter 14)

“By failing to disclose the location of the bore holes, the Forest Service has made it impossible for the public to comment on the possible environmental impacts (sic) Doe Run’s prospecting.” “Therefore, the public cannot comment on the propriety of the claim of confidentiality by Doe Run as set forth in the EA.” (Commenter 58)

**Response:** The Doe Run Company provided the locations of the proposed initial drill sites in their permit applications. Members of the interdisciplinary team visited the drill site locations and conducted site-specific analyses documented in the EA and project record.

The public was informed of the permit application areas where drilling would occur through maps and narrative descriptions provided during scoping and comment period.

Maps of the permit areas were distributed to the public during scoping (project file Folder A, Document 1). The information provided generated meaningful comments used in developing issues, mitigation, alternatives, and effects analyses. (EA, pages 6-7).

Further, where relevant to the analysis, the EA contains descriptions of existing conditions and potential effects. Additionally, features of potential interest found in the permit application area were discussed in more detail. For example, page 19 of the EA describes the caves, sinks and springs found within the permit application area. Page 24 describes the geographic location of proposed drill hole 048144 #1 as, “approximately 20 feet from a large existing wash that feeds in the head of a drainage.” Special stipulations and mitigation measures further describe areas that will be avoided or protected, such as mitigation measure S11, which prohibits drill sites on slopes greater than 35 percent.

The EA, including topographic maps with physical features of the permit application areas, were distributed to the public during the public notice and comment period. Again, the information provided generated meaningful comments. Fifty-eight people submitted comments. Of the 343
letters, phone calls, and emails received during the analysis, only 3 people (<1%) expressed an interest in obtaining the exact drill site locations. All 3 provided meaningful comments about the proposal without knowing the exact locations.

Therefore, given the information provided through scoping, maps, and the EA, the public had sufficient information to make meaningful comments on the proposal and effects analysis. Even if the locations of the proposed initial drill sites were further detailed to the public, the effects analysis would have made the same findings and conclusions.

As the Responsible Official, I believe I have adequate detail of information upon which to make a sound, reasoned decision.

32. Drill sites not “proprietary” information or “trade secrets”. Commenter 58 made the following statements: “It should also be noted that even if other some (sic) federal regulation provided the opportunity for certain information in a prospecting permit applications to be held confidential, the location of bore holes would not be the sort of information that would be subject to such regulation for the following reasons:

1. The information is not “proprietary” from a practical perspective given that the moment a drill platform is set, the whole world will know where the boring is located by the applicant’s own actions. Given this fact, one can logically conclude that the reason why Doe Run requested the location of the bore holes be held confidential is because these locations must be in environmentally sensitive areas.

2. In general terms, federal regulations which permit information submitted by a private party to the government to be held as confidential do so under the theory that such information constitutes a “trade secret” or “commercial or financial information.” The mere location of a bore hole does not fit within either of these categories for at least three reasons. First, the disclosure of the location of a bore hole does not involve what is normally considered a “trade secret” as no internal proprietary information pertaining to the way the location was selected would be revealed by the disclosure of its location. Second, as noted above, the world will know the location of the bore holes in a matter of weeks if the prospecting permit is granted, rendering the concept of the location of the bore hole as a “trade secret” to be forever guarded by the company as simply ludicrous. Finally, there would be no financial information involved in the disclosure of the bore hole locations.

Based upon the deficiencies noted above, the EA should be rescinded, and Doe Run should be made to disclose the location of all bore holes that it intends to drill.”

Response: The Doe Run Company released the site-specific locations for the proposed drill sites in a news release February 1, 2002. However, that information was not necessary for the public to make meaningful comments (see previous Response).

33. Environmental Impact Statement required. “Insufficient grounds to conclude that NEPA does not require an environmental impact statement.” (Commenter 58) “If the Forest Service had fully evaluated all possible effects, it would have concluded that an environmental impact statement is required.” (Commenter 14)

Response: The requirement for an Environmental Impact Statement (EIS) is dependent upon the nature of the action and the significance of the effects. The Finding of No Significant Impact
(FONSI) documents the determination of effects and concludes an *Environmental Impact Statement* is not required.

*Council on Environmental Quality* regulations provide direction on when to prepare an environmental assessment (40 CFR 1501.3) and when to prepare an environmental impact statement (40 CFR 1501.4.) 40 CFR 1501.3(b) states “Agencies may prepare an environmental assessment on any action at any time in order to assist agency planning and decision making.” The regulations further state that if the action does not normally require an EIS or cannot be categorically excluded from documentation in an EA or EIS, the agency shall prepare an environmental assessment (40 CFR 1501.4(b)). The agency will determine whether to prepare an environmental impact statement based on the environmental assessment 40 CFR 1501.4(c)). 40 CFR 1507.3, *Forest Service Handbook 1909.15* (20.6(1-4) discusses classes of actions that automatically require an EIS. Classes 1, 2 and 3 do not apply to this specific situation. Class 4 states: “Other proposals to take major Federal actions that may significantly affect the quality of the human environment” (FSH 1909.15 (20.6(4)). To determine if NEPA requires an EIS for actions on federal land, an environmental analysis would have to conclude that the effects of those actions have significant effects, as defined in 40 CFR 1508.27. The FONSI concluded an EIS is not necessary.

34. **Closely related actions:** “In response to comments received in the past, the EA acknowledges that some commentators argued that a current Environmental Impact Statement (“EIS”) was needed for prospecting under the National Environmental Policy Act (“NEPA”). These comments were based on the rather common-sense notion that mining follows prospecting. Indeed, one cannot mine unless one has previously prospected. Under NEPA, mining on federal land would require an EIS. Therefore, prospecting, as a ‘connected action’ to mining, should also require the completion of an EIS rather than a mere environmental assessment. Despite this obvious relationship between prospecting and mining, the EA curiously finds that:

Connected actions are ‘closely related actions which automatically trigger other action’ (40 C.F.R. 1508.25(a)(1)). Exploratory drilling does not automatically trigger mining. Similarly, mining is not a reasonably foreseeable action if no valuable ore body is discovered. In the past 19 years, there have been 12 prospecting permits in the Salem and Potosi/Fredericktown Ranger Districts. None of those have resulted in the filing of a preference right lease application. Mining is not relevant to the decision to be made; therefore this issue will not be further analyzed.

The Forest Services’ citation to 40 C.F.R. 1508.25 is correct, but the Forest Service fails to recite all of the relevant portions of the regulation. This regulation provides, in pertinent part, that ‘Connected actions’ are those that:

(a)(1)...[a]re closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

(i) Automatically trigger other actions which may require environmental impact statements.

(ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.

(iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

40 C.F.R. Section 1508.25(a)(1)(i)-(iii).
In its cursory dismissal of this point, the Forest Service only refers to the definition of ‘closely related action’ found in 40 C.F.R Section 1408.25(a)(1)(i), and fails to consider the definitions found in subparagraphs (ii) and (iii). In examining Doe Run’s prospecting permit application under subparagraphs (ii) and (iii), it becomes clear that an EIS is needed before issuing a prospecting permit. For example, under subparagraph (ii), an action is ‘connected’ if it cannot proceed unless another action is previously taken. Mining cannot proceed unless prospecting has first occurred, and there is absolutely no credible argument to the contrary.

Further, under subparagraph (iii), prospecting would still be part of a ‘larger action’ in that prospecting would never be undertaken unless the prospector hoped to someday mine. As noted above, absent a prospecting permit, a party cannot obtain the right to mine for lead. Absent the opportunity to mine a valuable deposit, a prospecting permit is meaningless. An action is ‘interdependent; unless it has ‘independent utility.” See Hudson River Sloop Clearwater, Inc. v. Department of the Navy, 836 F.2d 760, 764 (2d Cir. 1988). A prospecting permit has no independent utility. It is an interdependent part of a larger action – mining for profit- that depends on the larger action for its justification. Thus prospecting is a ‘connected action’ under NEPA. See Minnesota Public Interest Research Group v. Butz, 541 F.2d 1202, 1306 (8th Cir. 1976) (EIS which only examined currently proposed timber sales was incomplete where future sales were also to occur).” (Commenter 58)

Response: The Doe Run Company Prospecting Permit Project Environmental Assessment (EA) proposed action is to consent to and authorize seven prospecting permits (EA, page i). In this case, the “independent utility” of a prospecting permit is to determine if a valuable deposit of hardrock mineral exists (43 CFR 3505.10(a)).

The actions associated with these prospecting permits are displayed in the EA on pages 4 and 5, and again in the Alternative section (EA, pages 10-15). The proposal includes drilling 19 prospecting holes.

Actions connected to drilling those holes include constructing access to the drill site, preparing the drill site for the drilling equipment, plugging the holes, and reclamation of the disturbed area (EA, page 5). The roads and drill site preparation are connected pursuant to 40 CFR 1508.25(a)(1)(ii) because drilling cannot proceed unless there is a way to get there and a cleared place to set up the drilling equipment. Plugging the holes and reclaiming the disturbed sites are connected pursuant to 40 CFR 1508.25(a)(1)(ii) because those actions would not take place if the holes were not drilled or the sites disturbed.

The potential subsequent 213 drill holes are connected actions pursuant to 40 CFR 1508.25(a)(1)(iii) and addressed in the analysis because they are interdependent parts of a larger action (determining if a valuable deposit of mineral exists) and their justification is dependent on the need to determine if a valuable mineral deposit exists.

In the past 23 years, there have been 145 hardrock mineral prospecting permits on the Mark Twain National Forest. Only three of those (2%) have led to a mining lease.

While it is true that mining cannot take place unless prospecting has determined the existence of a valuable mineral deposit, prospecting does not always determine there is a valuable deposit. Therefore, prospecting does not automatically lead to mining and is not a connected action. See Response to Comment #8.

Prospecting can be analogous to medical testing, which is utilized to determine the presence of medical condition. If no condition is found, further action would not be necessary. Mining does not automatically occur after prospecting, any more than medical treatment automatically occurs after
tests.

35. ‘Cumulative Actions’ Require an EIS Under NEPA: “…‘cumulative actions’ also require the completion of an EIS. ‘Cumulative actions’ are defined as action ‘[w]hich when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.’ 40 C.F.R. Section 1508.25(a)(2). (Emphasis added). An application to prospect implicitly includes a proposal to mine as Doe Run would not have applied for a prospecting permit if it did not intend to mine the land to be explored under that permit. The Forest Service did not address this issue in the EA.” (Commenter 58)

Response: In the past 23 years, there have been 145 hardrock mineral prospecting permits on the Mark Twain National Forest. Only three of those (2%) have led to a mining lease.

The purpose (independent utility) of a prospecting permit is to determine if a valuable mineral deposit exists. It is separate from the purpose of mining, which is to extract valuable mineral deposits once they are located.

The application process for prospecting permits is described in Applying for Prospecting Permits, 43 CFR 3505.12 through 51, and is completely separate from the application process for mineral leases. The process for obtaining a mineral lease is discussed in 43 CFR 3507.11 through 43 CFR 3510.21. To obtain a lease, you must demonstrate that you have discovered a valuable deposit (described further in 43 CFR 3507.18) during the term of your prospecting permit.

There are no current proposed actions for mineral extraction in the project area, or anywhere else on Mark Twain Forest System lands. Therefore, there are no mineral lease applications for consideration in conjunction with the current prospecting permit applications.

Specific actions in this project with the potential to have cumulatively significant impacts (as defined in 40 CFR 1508.27) include the other prospecting permit applications. All seven prospecting permit applications are analyzed in the EA. The impacts were determined not to be cumulatively significant (see DN/FONSI), therefore, an EIS is not required.

36. “Similar Actions” Require an EIS Under NEPA: “…‘Similar’ actions also must be addressed in the same impact statement. ‘Similar’ actions are defined as those ‘[w]hich when viewed with other reasonably foreseeable …actions, have ‘similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography..’” See 40 C.F.R.1508.25(a)(3). (Emphasis added.) Obviously, in this context, the geography or prospecting and mining common as the permittee only is entitled to obtain a preference right lease to mine lands covered by the prospecting permit. Further, the timing between prospecting and mining is also common, as a successful applicant would prospect expeditiously and commence mining operations as soon as allowed. Moreover, time limits are placed on the prospecting that will ensure a relatively common time frame. Further, the critical question is whether mining is a reasonably foreseeable result of prospecting, not whether it is ‘certain’ or even ‘reasonably certain’ to occur. Extensive mineral deposits occur in the area to be prospected. Thus it is ‘reasonably foreseeable’ that Doe Run will seek to mine. Consequently, mining must be considered in the EA because it is a ‘reasonably foreseeable’ future activity and a connected action. This issue was not adequately addressed in the EA.” (Commenter 58)

Response: Similar actions are not required to be analyzed in the same document. 40 CFR 1508.25(a)(3) states, “An agency may wish to analyze these actions in the same impact statement.” Reasonably foreseeable actions were analyzed in the cumulative effects sections of each resource analyzed in the EA, and include the Oak Decline and Forest Health Project, proposed Pine Fuel
Reduction project, exploratory drilling on current mining leases, timber stand improvement and wildlife habitat maintenance and improvements (EA, page 49, for example).

As described in the response to Comment 35, there is an established process for mining applications on federal land. In this case, it is dependent on the independent utility of the prospecting permittee’s ability to establish a valuable mineral deposit. There is no application to mine within the project area. Ninety-eight percent of the prospecting permits on the Mark Twain have not lead to a mining lease. To analyze an application we have not yet received would require speculation and conjecture on our part.

37. **Cumulative Effects of Multiple Prospecting permits:** “In defense of its conclusion that prospecting and mining are not connected actions under NEPA, the Forest Service stated in the EA that there had previously been 12 other prospecting permits issued in the past 10 years. Prospecting, even when viewed in a false vacuum apart from mining, unquestionably has adverse environmental impacts. How many prospecting permits does the Forest Service intend to grant before it finally admits that there is a ‘cumulative impact’ from prospecting alone? Surely Doe Run’s permit application, which calls for up to 232 holes to be drilled, is the proverbial straw that breaks the camel’s back. Even without considering the impacts of mining, an EIS should also be prepared to assess the cumulative impacts of so many prospecting permits.” (Commenter 58)

**Response:** The commenter fails to describe what “adverse environmental impact” has occurred from prospecting. The direct, indirect, and cumulative environmental impacts of the seven proposed prospecting permits are described in the Effects section of the EA, beginning on page 17. The effects of past drilling is specifically addressed in the EA, in part, on pages 26, 35, 49, 56, 63, 66, 67, 68, 69, 70, 71, and 72. No direct, indirect, or cumulative adverse impacts from drilling on Forest System lands were identified in the analysis. Any future prospecting permit application analyses would consider past, present and reasonably foreseeable impacts of prospecting to assess the need for an EIS.

38. **Insufficient grounds upon which to conclude that the granting of a prospecting permit does not automatically lead to the issuance of a mining permit.** Commenter 58 made the following statements: ‘The Forest Service acknowledges in the EA the receipt of comments in the past that expressed the ‘concern that consent to further prospect drilling implies a legal obligation to consent to a lease at a future date. Some people believe that if the Forest Service consents to and the BLM authorizes exploration drilling, The Doe Run Company would have a legal right to mine in the future.’ In response, the Forest Service states that:

‘The consent to explore does not confer a legal right to lease or develop mineral deposits. A special stipulation is included in all hardrock exploration permits to which the Forest Service consents that states that the right to lease requires a separate environmental analysis and decision. Additionally, BLM’s regulations were updated in 1999 to include specific circumstances where a preference rights lease may be denied to include environmental impacts, conflict with land use plans, and if the surface managing agency does not consent to the lease (43 CFR3507.19). This issue has already been decided by law or policy, therefore [sic] is not significant to this analysis.’

43 C.F.R. 3507.19 has indeed been recently amended”…”There are no court cases that address the impact of this regulation. Therefore, it is not possible to state with certainty that it would prevent Doe Run from claiming a ‘preference right lease’ if a valuable deposit of lead is discovered. Indeed, an examination of the historical application of the hard-rock mineral leasing regulations confirms that a prospecting permit vests in the permittee an unconditional right to be issued a preference right lease. See Utah International, Inc. vs. Andrus, 488 F.Supp. 976, 983 (D. Co. 1980) citing NRDC v. Berklund, 458 F. Supp. 925, 930-931 (D.D.C. 1978), aff’d 609
F.2d 553 (D.C> Cir. 1979). In another case, minerals ultimately were not extracted but a steep price was paid by the United States to compensate the injured mining company. The United States voluntarily paid the Kerr-McGee Corporation and the Global Exploration and Development Corporation $19.5 million dollars to settle claims for compensation related to the refusal to issue preference right leases for phosphate mining in Florida. See Kerr-McGee Corporation v. United States, 36 Fed. Cl. 776 (1996).

It is axiomatic that an agency cannot overturn by regulation those rights that are granted to private parties under the Constitution or by statute. This fact, coupled with the lack of judicial interpretation of 43 C.F.R. 3507.19, makes it uncertain that the regulation will have the impact asserted by the Forest Service in its cursory dismissal of this concern.

Because of the uncertainties involved, in the event the Forest Service would at a later time determine to issue any prospecting permit in the Mark Twain forest, such permit should contain not only an absolutely clear statement that the issuance of a prospecting permit does not entitle such permit holder to mine, but also include a precise waiver of any actions that the applicant might bring to attempt to compel the automatic issuance of a mining permit.” (Commenter 58)

Response: A special stipulation is required for all hardrock mineral exploration permits to which the Forest Service consents. This special stipulation (listed in the EA on page 10 and in Appendix C) is included on the permit form R9-2800-6, and states that consent to the issuance of prospecting permits is “subject to the express stipulation that no mineral lease may be issued for the land under permit without the prior approval of the USDA Forest Service and the proper rendition of an environmental analysis in accordance with the National Environmental Policy Act of 1969, the findings of which shall determine whether or not and under what terms and conditions the lease may be issued.” [Note that the EA page 10, and in Appendix C reference 43 CFR 3500.9-1(b), which is incorrect. The correct reference is 43 CFR 3503.20(b)].

43 CFR 3503.13 states that hardrock mineral permits or leases require consent of the surface managing agency (in this case, the Forest Service). 43 CFR 3503.20 (b) and 3507.19 (c) reiterate that the surface management agency must consent before issuance of permits and leases. 43 CFR 3508.28 specifies that permit or lease stipulations may be imposed by the surface management agency to protect lands and resources.

39. “The issuance of any prospecting or mining permits is currently inappropriate until the United States Geological Survey completes its ongoing studies concerning mineral extraction activities in the Mark Twain Forest.” (Commenter 58)

“The United States Geological Survey (“USGS”) is undertaking a comprehensive analysis to assess the potential environmental impact of lead mining in the Mark Twain National Forest. In a letter to United States Senator Christopher S. Bond dated July 30, 1999, Mr. Charles Groat, Director of the USGS, stated that an interagency technical team chaired by a Forest Service employee, Mr. Bob Willis, had been formed in 1988 to study this issue. Mr. Groat’s letter further stated that: ‘The technical team believes that there is insufficient scientific evidence available to determine the potential environmental impact of lead mining in the [Mark Twain National Forest].’ On January 12, 2002 (sic), Mr. Jim Barks, the State of Missouri Director of USGS, stated in an interview with this Office that, assuming adequate funding was in place, it would take an additional five to six years to complete the studies necessary to assess potential impacts of mining in the Mark Twain National Forest. The current EA does not substantively discuss this issue. It is premature and inappropriate for the Forest Service to issue any permits for intrusive
activities in the Mark Twain National Forest until the USGS studies are completed. In the alternative, the Forest Service could conduct an (sic) full environmental impact statement investigation to assess such impacts.” (Commenter 58)

Response: The applications are solely for prospecting and do not include any request for mining (EA, page 9). There are no proposals for mining, therefore we did not speculate on effects of actions for which there are no proposals. Please see the response to Comment 35 through 38 above.

[Note: The technical team referred to in Comment 39 was created specifically to assess the impacts of possible mining on the Eleven Point and Current River watersheds, which are located in another part of the state, not near the project area.]

40. Hole plugging procedures. “The narrative in the report does not state that the surface and downhole casings will be removed as part of the plugging procedure. They should be removed. Assuming casing removal, the description and illustration of plugging contained in the EA are adequate. DNR recommends an alternative plugging process where that portion of the borehole from the second plug be filled to within 2 feet of the surface with grout rather than placing chlorinated pea-gravel on top of the plug. Similarly, the hole plugging method for holes encountering cavernous portions is recommended to include a grout plug without an overlying pea gravel fill.” (Commenter 57)

“If a permanent surface casing is installed, the drill hole plugging method depicted on Figure 2 does not meet all the requirements of 10 CRS 23-6.050. During plugging, a 2-foot diameter hole is to be dug around the casing and the top 3 feet of the casing is to be removed. The drill hole is to be grouted via a termie from total depth to 2 feet below ground surface and the remaining hole filed with soil. Plugging may include a plug at the bottom of the Davis Formation and the borehole filled with chlorinated pea-gravel from the base of the borehole to the plug and the remainder of the drill hole grouted via a termie from the plug to 2 feet below the surface.” (Commenter 57)

“In all cases, drill holes must be plugged by a permitted driller and a registration form submitted for each drill hole. The drill hole is to have a temporary surface cap and is to remain open no more than 60 days unless the drill hole is converted to a well or a variance is obtained from this department’s Wellhead Protection Section for one-time, only, 60-dya extension.” (Commenter 57)

“There is a correction to how the exploration holes will plugged. The EA has a variety of statements that are inconsistent. The hole plugging on page 5 is correct and meets the requirements of the Missouri Department of Natural Resources. The requirements in Appendix B not only serve no technical purpose, they also are not consistent with the requirements on page 5 and do not meet the DNR requirements. Appendix B should be modified or deleted to reflect the plugging techniques identified on page 5.” (Commenter 7)

Response: Appendix B contains the Missouri Department of Natural Resources (DNR) hole plugging procedures for test holes with removable surface casing pipe. Drill hole plugging and abandonment is further discussed on pages 22-23 of the EA. In all cases, DNR hole plugging procedures would be followed.

41. Permit 048105: “The small area at the north edge of Section 6, Township 32 North, Range 1 West should be excluded from permit. This is a sensitive area that adjoins private property.”
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(Commenter 3)

Response: Part of the area in question is characterized by slopes greater than 35% on either side of a riparian. Resources are protected by the mitigation measures in Alternative B and further protected by the mitigations and special stipulations in Alternative C. Specifically, in Alternative C, no drilling would be allowed on slopes greater than 35% or in filter strips along riparian areas.

42. Full Range of Impacts from all drill holes. “That many fewer holes were drilled in the recent past than were permitted (EA 47, 55). An environmental assessment can’t be made on an assumption of minimum impact but should at least consider the full range of possible effects. It should be assumed that all 232 holes to be permitted would be drilled. The assumption of the minimum impact weakens the credibility of the EA and is reason to decide counter to its recommendation and in favor of No Action.” (Commenter 31, 37).

Response: The EA analyzed the effects as if all 232 holes would be drilled (EA, pages 11, 12, 18, 20-27, 47, 49, 52, 55, 72).

43. Karst topography “Our final comment concerns the geology identified in the study area by the EA. Our geologic experience spans about 100 years of work in Southern Missouri and predates ownership by the Forest Service. The geologic statements that the applications fall within a large region of well-developed Karst terrain that is characterized by the presence of caves, springs, sinkholes, and gaining and losing streams, and that the Salem and Potosi/Fredericktown Ranger Districts have 116 known caves, numerous sinks and springs, watersheds and hydrology does not correctly described the permit application areas or the adjacent mined area. All this appears excessive when compared to the brief but much more pertinent statement that no springs, only one cave and three sinks occur within the boundaries of the seven applications.” (Commenter 7)

Response: The EA (page 19) describes features of karst topography that exist on the Ranger Districts, and then narrows the discussion to the features that occur within the boundaries of the permit applications.

44. Construction Access and Drill Site (page 9): “When drill sites (and access routes) are on steep slopes, the potential for soil erosion increases greatly. Surface water quality must be protected. Therefore, drill sites on more moderately sloped areas are preferable.” (Commenter 57)

Response: Existing roads would be used where possible (EA, page 5). Mitigation measures and special stipulations were developed to protect forest resources, including water quality (EA, page 12-15). Specific mitigations for temporary road construction are S3, S4, and S7. In Alternative B, mitigation measure S8 provides direction for drill sites on slopes greater than 35% (erosion control matting and construction of effluent pits for drill sites). In Alternative C, drill sites would not be allowed on slopes greater than 35% (S11) and effluent pits would be constructed at all drill sites (W3).

45. Diamond Drilling (page 9): “This description implies everything from the top of solid bedrock to beyond the base of the Lamotte will be cored. Appendix H, however, states that coring will start in the Davis Formation. The top of coring and the interval cored should be consistent.” (Commenter 57)

Response: Comment noted.

46. Road Construction (page 15, section 2): “The effects of road construction should be identified.” (Commenter 57)
Response: Effects of road construction are discussed in the EA on pages 16, 18, 24, 25, 28, 29, 31, 32, 33, 34, 35, 36, 37, 47, 48, 49, 51, 52, 54, 55, 56, 63, 64, 66, 67, and 71. Mitigations measures for temporary road locations are S3, S4, S5, S6, and S7. No adverse impacts from road construction were identified.

47. Geology – Appendix F

a. Shale partings, page 2, 4th full paragraph: “While the Derby-Doerun may have numerous shale partings, these are not consistent in the formation throughout southeast Missouri, and it should not be assumed that they will be present. If not present, the formation may not have the same potential as an aquitard.” (Commenter 57)

Response: Drill hole plugging and abandonment procedures (established by DNR) would prevent mixing of the water between aquifers and restore pre-drilling hydrologic conditions (EA, page 23). Additional information is discussed in detail on pages 22 and 23 of the EA.

b. Knobs and faults, page 1, 3rd paragraph: “Much of the greater relief of the knobs is due to displacement on faults, rather than due to erosion. Because of this, the presence of a Precambrian knob suggests a fault may be present. Faults are often sites of dissolution of carbonates that may lead to intersection of voids during drilling.” (Commenter 57)

Response: Potential effects of drilling into a void and procedures for mitigation if it occurs are discussed in the EA on page 20.

c. Erroneous statements on geology: (Commenter 57) “The following comments do not affect the drilling, but are erroneous statements on the geology of the region that are contained in the text. For future reference and use of this report, it is recommended that these should be corrected.”

i. “p. 1, 2nd para. – This paragraph refers to the St Francois Mountains as a major structural feature. The Ozark Uplift is the main structural feature, not the St. Francois Mountains. The St. Francois Mountains are rather a result of the uplift.”

ii. “p. 1, 3rd para. – Sedimentation patterns do not create structural features. Structural features are related to movement of faults, uplifts, and compressional forces.”

iii. “p.2, 1st full para. – In the description of the Gasconade Dolomite, it is noted that the chert content lessens toward the ‘surface.’ The text should note that the upper Gasconade Dolomite has minimal chert, while the lower Gasconade is chert rich.”

iv. “p. 2, 8th full para. – In the description, it is noted that the Precambrian has ‘intrusive basic masses.’ The text should note that there are small mafic dikes and intermediate igneous rocks as well.”

Response: Comments noted.