

PEA Section/page	# of times comment appears in the comment letters	Comment	Response
2.1.13		No maps of the sage grouse lek appear in the EA.	BLM and NDOW do not publically disclose the location of sage grouse leks to prevent undue disturbance.
2.1.13	4	Did the biological survey indicate any nesting habitat or core breeding areas? Numbers of birds?	Details on the lek and the habitat are provided in Section 3.11.1.2 of the Preliminary Environmental Assessment.
2.1.13	7	Scientific evidence does not support the Environmental Protection Measures for the special status species (sage grouse).	The lek buffer and timing restrictions are based on the best available science gathered both across the range of the sage-grouse and tailored to NV. The proponent has agreed to these EPMS.
2.1.13		How much of the project area is affected by the 3.2 mile buffer?	<p>Approximately 15,290 acres of the total 19,801 acres of the plan (77%) would be located within the 3.2 mile buffer. Based on SEL's proposed drill sites, 159 planned/existing borings out of 195 (82%) would be located within the 3.2 mile buffer.</p> <p>The actual buffer location is not shown in order to protect the location of the lek.</p>
2.1.13	5	Do these restrictions apply to all public land users?	Per IM-2011-043, BLM is applying conservation policies and procedures across multiple programs, while BLM considers amendments or revisions to Land Use Plans. Maintaining and restoring high quality habitat for the Greater Sage-grouse is consistent with the BLM multiple-use and sustained-yield management direction of the Federal Land Policy and Management Act. As such, the restrictions do not apply to casual users/casual use.

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2.1.13		Do these restrictions differentiate between short and long term impacts? Exploration versus active mining?	There is strong evidence from the literature to support that surface-disturbing mineral development within priority sage-grouse habitats is not consistent with a goal to maintain or increase populations or distributions on either the short or the long term. There are no published science reports that development has a positive effect on sage-grouse (see the National Technical Team [NTT] Report). Magnitude of losses varies from one field to another but findings show that impacts are universally negative and typically severe. Blickley et al (as cited in NTT report) validated immediate and sustained declines in grouse continued throughout the study.
3.11.1.2	3	Was the lek due to the drill site?	There is no science to support the idea that drill sites create leks; rather there is ample evidence that sage-grouse abandon leks due to drilling and associated activities (Doherty et al 2008; Carpenter et al 2010; Aldridge and Boyce 2007; Lyon and Anderson 2003).
3.11.1.2	3	Were other leks known about in the area?	The closest documented lek to the project area is approximately 4 miles away to the north, northeast outside of the project area.

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3.11.1.2	2	Since the project area is contiguous with other sage grouse habitat areas, any temporary displacement would be absorbed by adjacent habitat.	Avoidance of an area should not be considered a simple shift in habitat use but rather a reduction in the distribution sage-grouse (Walker et al 2007). Avoidance is likely to result in true population declines if density dependence, competition, or displacement of birds into poorer-quality adjacent habitat lowers survival or reproduction (Holloran and Anderson 2005, Aldridge and Boyce 2007, Holloran et al 2010). High site fidelity in sage-grouse also suggests that unfamiliarity with new habitats may also reduce survival as in other grouse species (Yoder et al 2004). Furthermore, habitat loss is considered a major reason for sage-grouse declines so the thought that adjacent habitat can absorb additional sage-grouse has shown to be incorrect.
3.11.1.2	2	There appears to be way too much required mitigation based upon the presence of one newly recorded sage grouse lek that is probably due to exploration activities.	Mitigation is not based on a single lek but rather the concentration of leks in the area. Within 5 miles of the project area, there is another known lek.

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3.11.1.2	6	If the bird is so threatened, why does NDOW still allow it to be hunted?	Sage grouse are only hunted in areas with sustainable populations. Five counties have been closed to hunting sage grouse. In addition, 22 hunt units have been closed. No studies have shown hunting to be a primary cause of reduced greater sage grouse numbers. The USFWS has not identified hunting as a major threat (ranked 16 out of 19) (USFWS 2005 Finding). Hunting sage grouse generates data and funds that are directly applied towards sage grouse management. Sage grouse hunting is closely regulated and follows Western Association of Fish and Wildlife Agencies (WAFWA) management guidelines which include some of the following. There has to be at least 200 strutting males for two consecutive years before that population management unit (PMU) is open for hunting. In addition, there is no hunting in populations with less than 300 breeding birds. WAFWA also suggest that harvest should not exceed 10% based on the recent study in Nevada by (Sedinger et al. 2012) that states that a harvest of 11% of the fall population is unlikely to have an important influence on local population dynamics of sage grouse. Currently in Nevada, the harvest rate of the fall sage grouse population is between 2% and 6%.
3.1.4	2	Since 1/3 rd of the project area has burned, it should not be subject to the 3.2 mile buffer around the lek.	Although 1/3 of the area has burned, parts of the burned area are recovering. Additional habitat around the project has also recently burned most likely forcing sage-grouse back into areas that were burned but are recovering.
4.2.4.9		Since the cumulative effects area is so large, the 3.2 mile buffer should be relaxed.	The establishment of the buffer is based on best available science not the size of the cumulative effects area.

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NR	5	The 3.2 mile buffer is a detriment to the exploration industry.	Comment noted. The 3.2 mile buffer is only in effect from March through June; exploration and drilling is allowed in the other 8 months of the calendar year.
NR	3	The buffer is in effect during the peak drilling season.	Comment noted. The “peak breeding season” when the buffer is in effect, also coincides with the end of winter and early spring, when there are often substantial rains and snowfall.
NR		The sage grouse restrictions tarnish Nevada’s exploration friendly reputation.	Comment noted.
NR	10	What is the scientific basis for the 3.2 mile lek buffer and timing restrictions? Where was the data collected? What studies are the basis for this basis?	The NTT Report notes that protecting even 75-80% of nesting hens would require a 4-mile buffer; studies done specifically across NV by USGS employee Pete Coates, statistically show around 90% of hens are protected with a 3.2 mile buffer. The proponent has also agreed to make this mitigation measure an environmental protection measure.
NR	2	The lek buffer and timing restrictions are arbitrary and anti-industry in nature.	The lek buffer and timing restrictions are based on the best available science gathered both across the range of the sage-grouse and tailored to NV.
NR	3	The sage grouse restrictions do not allow multiple uses of Federal lands, specifically 43 USC 1701.	BLM is mandated under FLMPA to manage for multiple uses of Federal lands, including wildlife uses. Therefore, the restriction is in keeping with 43 USC 1701.
NR	2	The sage grouse restrictions threaten the financial survival of the Snowstorm Exploration LLC.	Comment noted. The proposed action and EPMs were developed in coordination with the proponent, NDOW and the BLM.

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NR		Sage grouse restrictions will financially impact providers to the exploration business.	Comment noted.
NR	2	Winter weather will prevent exploration from occurring in the months before the sage grouse closure. Exploration will be limited to only 4 months out of the year due to the restrictions.	The stated sage grouse restrictions do not preclude drilling activities at other times of the year. Winter weather could preclude drilling activities, but winter weather is highly variable in this area.

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NR	2	What are the credentials of the people who have done the sage grouse studies that the buffer is based on?	<p>David Naugle, Professor, Wildlife Biology Program, University of Montana, Missoula, and Science Advisor, USDA NRCS Sage-grouse Initiative. Dr. Naugle's applied research focuses on creating conservation planning and evaluation tools to promote conservation of mid-continent and western grassland ecosystems. His many published papers have characterized scale-dependent habitat use in birds, assessed effects of wind energy on wildlife, evaluated wildlife benefits of CRP, and probed the sociology behind changing land use practices. His new book evaluates impacts of oil and gas development on sage grouse populations. As part of this work, Dave and his students were the first to discover and quantify mortality of sage-grouse from West Nile virus. Pete Coates bio can be found at: http://www.werc.usgs.gov/person.aspx?personID=64 (last accessed June 24, 2013); Kevin Doherty received his Ph.D. in Wildlife Biology from the University of Montana in 2008, a M.S. in Wildlife Conservation with a minor in statistics from the University of Minnesota in 2004, and a B.S. in Wildlife Science from Virginia Tech in 1997. He has published 22 peer reviewed scientific papers, and several book chapters on topics including landscape ecology, sage-grouse and sagebrush ecology, and conservation planning and mitigation policy in relation to energy development. His expertise in GIS based habitat modeling and landscape ecology has influenced conservation policy and land management decisions by providing the scientific basis on which multi-stakeholder groups moved towards solutions.</p>

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NR		What is the specific nature of drilling activities and traffic to sage grouse?	As noted in the PEA, exploration activities may include multiple large drilling rigs, water trucks, road and drill pad construction equipment, and passenger vehicles. The increased traffic and noise could disturb the sage grouse. Abandonment may increase if leks are repeatedly disturbed by vehicle traffic on nearby roads (Lyon and Anderson 2003), or by noise and human activity associated with energy development during the breeding season (Remington and Bruan 1991; Holloran 2005; Kaiser 2006, Blickley and Patricelli in review as cited by NTT Report). Roads may indirectly affect lek persistence by altering productivity of local populations or survival at other times of the year. Birds may avoid otherwise suitable habitat as the density of roads, power lines or development increases (Lyon and Anderson 2003; Holloran 2005; Kaiser 2006; Doherty et al 2008, Carpenter et al 2010).
NR		How many years has the lek in question been studied?	Information on the lek site is contained in section 3.11.1.2 of the PEA.
NR	6	Is it a BLM policy to restrict mining and economic development in order to protect sage grouse?	It is BLM policy to balance competing needs when providing for multiple uses on Federal lands; thus, proactively implementing the right policies and conservation measures now will reduce long-term regulatory burdens on stakeholders.

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NR	3	How are negative impacts from a project mitigated so that a company can financially survive?	The answer depends on the magnitude, frequency, and duration of negative impacts. Mitigation costs are a legitimate cost of business and place the environmental costs of development mostly on the entities that are impacting the environment. Without environmental mitigation, costs of alleviating environmental damage caused by development could be placed in the hands of the government which would in turn pass costs on to taxpayers not responsible for environmental impacts.
NR		Very little facts are known about exploration drilling on sage grouse.	There is strong evidence from the published literature to support that surface-disturbing energy or mineral development within priority sage-grouse habitat is not consistent with a goal to maintain or increase populations of sage-grouse or their distribution (see NTT Report and USGS Open File Report 2013-1098). None of the published science reports a positive influence of development on sage-grouse populations or habitats.
NR		If wildfire is the major threat to sage grouse, a drill and exploration crew would be available to put out any fires in the lek area.	Exploration crews are not trained nor equipped to fight wildfires.
NR		Do not shut down Twenty-One Creek Rd. It also serves private land holders.	Restrictions only apply to commercial operators needing a permit from the BLM and not casual users.
NR		Please consider allowing activities within ½ mile of the lek.	Comment noted.
NR		A 3.5 mile buffer zone would also protect predators. Hunters will be kept out of the area.	Hunting is not an activity that the BLM permits. Hunting permits are issued by NDOW.

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NR		Since this lek was developed during a drilling project, drilling should be considered a beneficial activity.	There is no evidence that lek was developed during drilling. There is no science to support the idea that drill sites create leks; rather there is ample evidence that sage-grouse abandon leks due to drilling and associated activities (Doherty et al 2008; Carpenter et al 2010; Aldridge and Boyce 2007; Lyon and Anderson 2003).
NR		The lek buffer and restrictions would hamper firefighting activities.	Fire risk is generally low in Northern Nevada from March through May. The lek buffer restrictions do not apply for emergency operations which include firefighting.
NR		The buffer and timing restrictions prevent enforcement of the Wild Horse and Burro Act.	The lek restrictions would not prevent census and monitoring from being conducted. The Snowstorms Mountains HMA was not gathered recently, however an EA (Owyhee Complex Wild Horse Gather EA) was prepared and decision issued and any gather activities would be conducted per this analysis and decision.
NR		The buffer makes livestock management difficult.	The buffer is for human-induced surface disturbance and placement of structures not grazing by livestock. Where livestock grazing is meeting land health standards, it has not been shown to adversely impact sage-grouse.
NR		The buffer restricts public access and use of the federal land.	Casual use activities, that do not require a permit from the BLM, are not restricted.
NR		Exploration drilling is a short-term, low impact activity that allows sage grouse to thrive.	Comment noted. The BLM welcomes the opportunity to review published scientific studies that support this statement.

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NR	3	The NTT report did not recommend a 3.2 mile buffer around exploration projects. The report (page 20) comments: “Past BLM conservation measures have focused on a 0.25 mile No Surface Occupancy (NSO) buffers around leks, and timing stipulations applied to 0.6 mile buffers around leks to protect both breeding and nesting activities.”	This is a selective quote from the NTT report. It misses the point of the recommendation on page 21 of the study that seasonal timing restrictions may be effective for exploration projects. The selective quote also misses the discussion on 4 mile buffer only protecting 75-80% of hens; and misses the recommendation to exclude mineral development and other large-scale development from priority habitats.
NR		The NTT report (pg. 21) concludes: “... and where valid existing rights exist, minimize those impacts by keeping disturbances to 1 per section with direct surface disturbance impacts held to 3% of the area or less.” The Snowstorm project will only disturb 200 acres out of 19,801 acres.	<p>Selective quotation. Pg. 24 & 25 recommends for locatable minerals: “ In plans of operations required prior to any proposed surface disturbing activities, include the following: Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, WO IM 2008-204). Example: purchase private land and mineral rights or severed subsurface mineral rights within the priority area and deed to US Government).</p> <p>Consider seasonal restrictions if deemed effective. Make applicable Best Management Practices (see Appendix E) mandatory as Conditions of Approval within priority sage-grouse habitat.”</p> <p>Further, the 3% disturbance is total disturbance and it may be that over 3% of the area is already disturbed, thus preventing the Project until such time as habitat is restored to reduce the 3% threshold down.</p>

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NR		Mining is a minor impact to sage grouse.	Surface mining and appurtenant facilities within sage-grouse habitat result in the direct loss of habitat, habitat fragmentation and indirect impacts from disturbance (e.g. noise, dust). Current reclamation activities do not always consider sage-grouse habitat needs. Those that do may take decades to restore habitat and experience the same limitations as restoration activities.
NR		Does the Snowstorm lek meet Connelly et al's (2000) definition of a lek?	Yes, sage grouse were observed strutting in 2011 and 2012. In 2013, there were no birds observed during one site visit and in NDOW's flyover. A site visit in 2014 did find evidence that birds had been lekking in the area. The site visits do not constitute valid sage grouse surveys.
NR		Why does the BLM and FWS consider the sage grouse as a potential Endangered Species but not the grizzly, American bison, wolverine, lynx and black-footed ferret?	Not relevant to the PEA, but Canadian lynx and grizzly bears are listed by FWS as threatened, black footed ferrets are a listed endangered species. The wolverine is proposed for listing as threatened.

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NR		NDOW's sage grouse maps are flawed because: 1) apply numerical techniques to categorical data; 2) mapping campaigns are based on different types of data that lacks spatial consistency and coherence; and 3) the remote sensing used to create the maps confuses hydrothermal mineralization with vegetation (see submitted paper).	<p>Answers to this comment:</p> <ol style="list-style-type: none"> 1. SynthMap product NDOW used is the best available product for statewide land cover mapping. 2. Each of the components in the final SynthMap products has been independently validated and peer-reviewed and is considered an acceptable land cover product by the landscape mapping community. 3. The original white paper incorrectly stated that we used an aggregation technique to generalize the original 30 meter pixel resolution R-value data to 100 meter pixel resolution. In fact, NDOW used a resample tool with the majority re-sampling technique to create the 100 meter pixel data. An updated white paper is now available which explains all of this (a copy can be provided if needed). 4. Furthermore, the sage grouse habitat categorization map was reviewed and updated pixel by pixel by the local field biologist. This means that regardless of the results of the GIS analysis, on-the-ground knowledge was brought into validate the map. The final product is the culmination of all the available knowledge of sage grouse use of the landscape, not just the GIS analysis. This means in areas where the GIS analysis was wrong, we corrected it by hand, based on the local expert knowledge of the biologist. We anticipate that site-specific investigations may result in the need to change the mapping. Site conditions may also change in the future which would warrant making changes to the map. It is expected that a 3-5 year update cycle will be put into practice.

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NR		A single lek activity was observed on the actual drill site in 2012. No such activity was recorded in 2013. Unless the lek can be positively demonstrated, the restrictions should be completely abandoned.	A valid lek survey was not done in 2013. The NDOW protocol requires four visits spaced 8 days apart.
NR	2	Mining exploration is not one of the reasons in the scientific reports for the decline of the sage grouse.	Activities associated with mining (noise, dust, habitat loss, etc.) are in scientific reports as reasons for the decline of sage grouse.
NR		Sage grouse decline is being due to natural selection.	Comment noted.
NR		Why are there no travel restrictions on the general public? Wouldn't general travel be as detrimental?	General public activities fall under the Casual Use category and is not subject to BLM regulations. Casual use is generally dispersed and short term. Casual use is not seen as being of the same intensity of commercial operations. However, BLM can also close the existing roads to prevent casual use in the area and restrict use of off road vehicles such as ATVs.
NR		3.2 mile buffer not needed since the lek can be protected by topography.	Sound and GIS studies would need to be done before this can be approved. The general topography of the area suggests it would offer little protection for the sage grouse.
NR		BLM is not in compliance with their IM 2012-043 since we are only required to avoid or minimize adverse effects.	The buffer is part of the avoidance measures. The proposed environmental protection measures would avoid or minimize adverse effects; thus, BLM is in compliance with IM 2012-043.

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